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THE ARCHITECTS' JOURNAL



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every issue does not necessarily contain all these contents, but they are the regular features which continually recur

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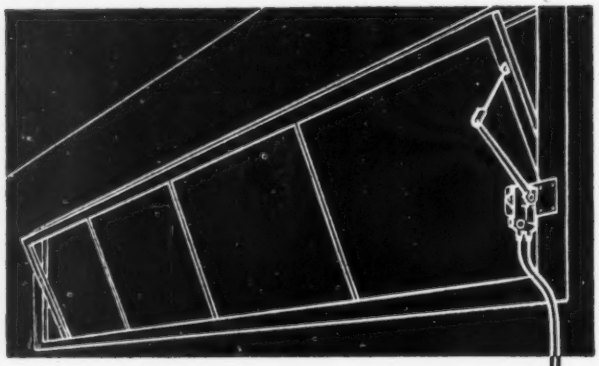
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3385] [Vol. 131
E ARCHITECTURAL PRESS
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★ A glossary of abbreviations of Government Departments and Societies and Committees of all kinds, together with their full address and telephone numbers. The glossary is published in two parts—A to Ii one week, Il to Z the next. In all cases where the town is not mentioned the word LONDON is implicit in the address.

AA	Architectural Association, 34/6, Bedford Square, W.C.1.	Museum 0974
AAI	Association of Art Institutions. Secy.: J. H. Holden, College of Art, Cavendish Street, Manchester 15	
ABS	Architects' Benevolent Society. 66, Portland Place, W.1.	Langham 5533
ABT	Association of Building Technicians. 1, Ashley Place, S.W.1.	Victoria 0447-8
ACGB	Arts Council of Great Britain. 4, St. James's Square, S.W.1.	Whitehall 973?
ADA	Aluminium Development Association. 33, Grosvenor Street, W.1.	Mayfair 7501/8
ARCUK	Architects' Registration Council. 68, Portland Place, W.1.	Langham 5861
BAE	Board of Architectural Education. 66, Portland Place, W.1.	Langham 5721
BC	Building Centre, 26, Store Street, Tottenham Court Road, W.C.1	Museum 5400
BCC	British Colour Council. 13, Portland Square, W.1.	Welbeck 4185
BCCF	British Cast Concrete Federation. 105, Uxbridge Road, Ealing, W.5.	Ealing 9621
BCIRA	British Cast Iron Research Association. Alvechurch, Birmingham.	Redditch 716
BDA	British Door Association. 10, The Boltons, S.W.10.	Fremantle 8494
BE	Building Exhibition. 11, Manchester Square, W.1.	Hunter 1951
BEDA	British Electrical Development Association, 2, Savoy Hill, W.C.2.	Temple Bar 9434
BIA	British Ironfounders' Association. 145, Vincent Street, Glasgow, C.2.	Glasgow Central 2891
BID	Building Industries Distributors. 52, High Holborn, W.C.1.	Chancery 7772
BINC	Building Industries National Council. 11, Weymouth Street, W.1.	Langham 2785
BOT	Board of Trade. Whitehall Gardens, Horseguards Avenue, Whitehall, S.W.1.	Trafalgar 8855
BRS	Building Research Station. Bucknalls Lane, Watford.	Garston 4040
BSA	Building Societies Association. 14, Park Street, W.1.	Mayfair 0515
BSI	British Standards Institution. British Standards House, 2, Park St., W.1.	Mayfair 9000
CABAS	City and Borough Architects Society. C/o S. A. G. Cook, A.R.I.B.A., Borough Architect and Director of Housing, Town Hall, High Holborn, W.C.1.	Holborn 3411
CAS	County Architects' Society. C/o S. Vincent Goodman, F.R.I.B.A., Shire Hall, Bedford.	Bedford 67444
CCA	Cement and Concrete Association. 52, Grosvenor Gardens, S.W.1.	Belgravia 6661
CDA	Copper Development Association. 55, South Audley Street, W.1.	Grosvenor 8811
COID	Council of Industrial Design. 28, Haymarket, S.W.1.	Trafalgar 8000
CPRE	Council for the Preservation of Rural England. 4, Hobart Place, S.W.1.	Sloane 4280
CUC	Coal Utilization Council. 3, Upper Belgrave Street, S.W.1.	Sloane 9116
CVE	Council for Visual Education. 13, Suffolk Street, Haymarket, S.W.1.	Reading 72255
DIA	Design and Industries Association. 13, Suffolk Street, S.W.1.	Whitehall 0540
EJMA	English Joinery Manufacturers' Association (Incorporated). Sackville House, 40, Piccadilly, W.1.	Regent 4448
EPNS	English Place-Name Society. 7, Selwyn Gardens, Cambridge.	
FAS	Faculty of Architects and Surveyors. 68, Gloucester Place, W.1.	Welbeck 9966
FASS	Federation of Associations of Specialists and Sub-Contractors, 14, Bryanston Street, W.1.	Welbeck 1781
FBBDO	Fibre Building Board Development Organization Ltd. (Fidor), Stafford House, Norfolk Street, W.C.2.	Covent Garden 3008
FBI	Federation of British Industries. 21, Tothill Street, S.W.1.	Whitehall 6711
FC	Forestry Commission. 25, Savile Row, W.1.	Regent 0221
FCMI	Federation of Coated Macadam Industries. 37, Chester Square, S.W.1.	Sloane 1002
FDMA	The Flush Door Manufacturers Association Ltd. Trowell, Nottingham.	Ilkeston 623
FLD	Friends of the Lake District. Pennington House, nr. Ulverston, Lancs.	Ulverston 201
FMB	Federation of Master Builders. 33, John Street, W.C.1. Tel.: Chancery 7583 (6 lines)	
FPC	The Federation of Painting Contractors, St. Stephen's House, S.W.1.	Whitehall 3902
FRHB	Federation of Registered House Builders. 82, New Cavendish Street, W.1.	Langham 4341
GPDA	Gypsum Plasterboard Development Association. 11, Ironmonger Lane, E.C.2.	Monarch 8888
GC	Gas Council. 1, Grosvenor Place, S.W.1.	Sloane 4554
GG	Georgian Group. 2, Chester Street, S.W.1.	Belgravia 3081
HC	Housing Centre. 13, Suffolk Street, Pall Mall, S.W.1.	Whitehall 2881
IAAS	Incorporated Association of Architects and Surveyors. 29, Belgrave Square, S.W.1.	Belgravia 3755
ICA	Institute of Contemporary Arts. 17-18, Dover Street, Piccadilly, W.1.	Grosvenor 6186
ICE	Institution of Civil Engineers. 1, Great George Street, S.W.1.	Whitehall 4577
IEE	Institution of Electrical Engineers. Savoy Place, Victoria Embankment, W.C.2.	Temple Bar 7676
IES	Illuminating Engineering Society. 32, Victoria Street, S.W.1.	Abbey 5215
IGE	Institution of Gas Engineers. 17, Grosvenor Crescent, S.W.1.	Sloane 8266
IHVE	Institution of Heating and Ventilating Engineers. 49, Cadogan Square	Sloane 1601/3158
IIBDID	Incorporated Institute of British Decorators and Interior Designers. 37, Soho Square, W.1.	Gerrard 5056



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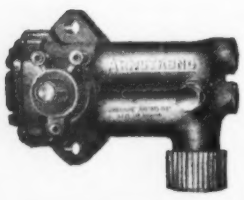
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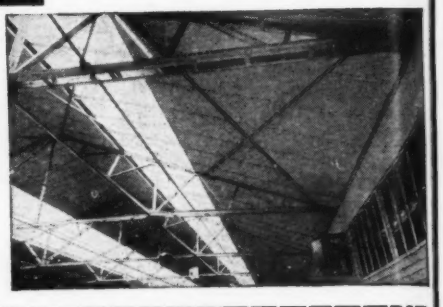
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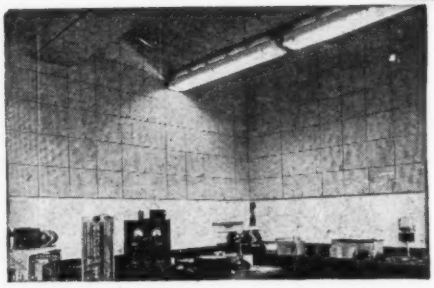
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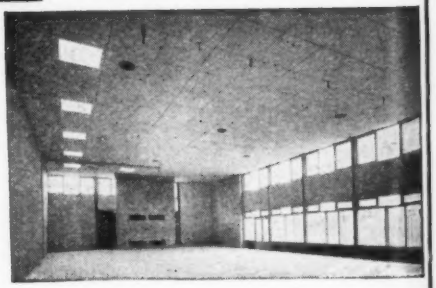
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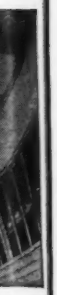
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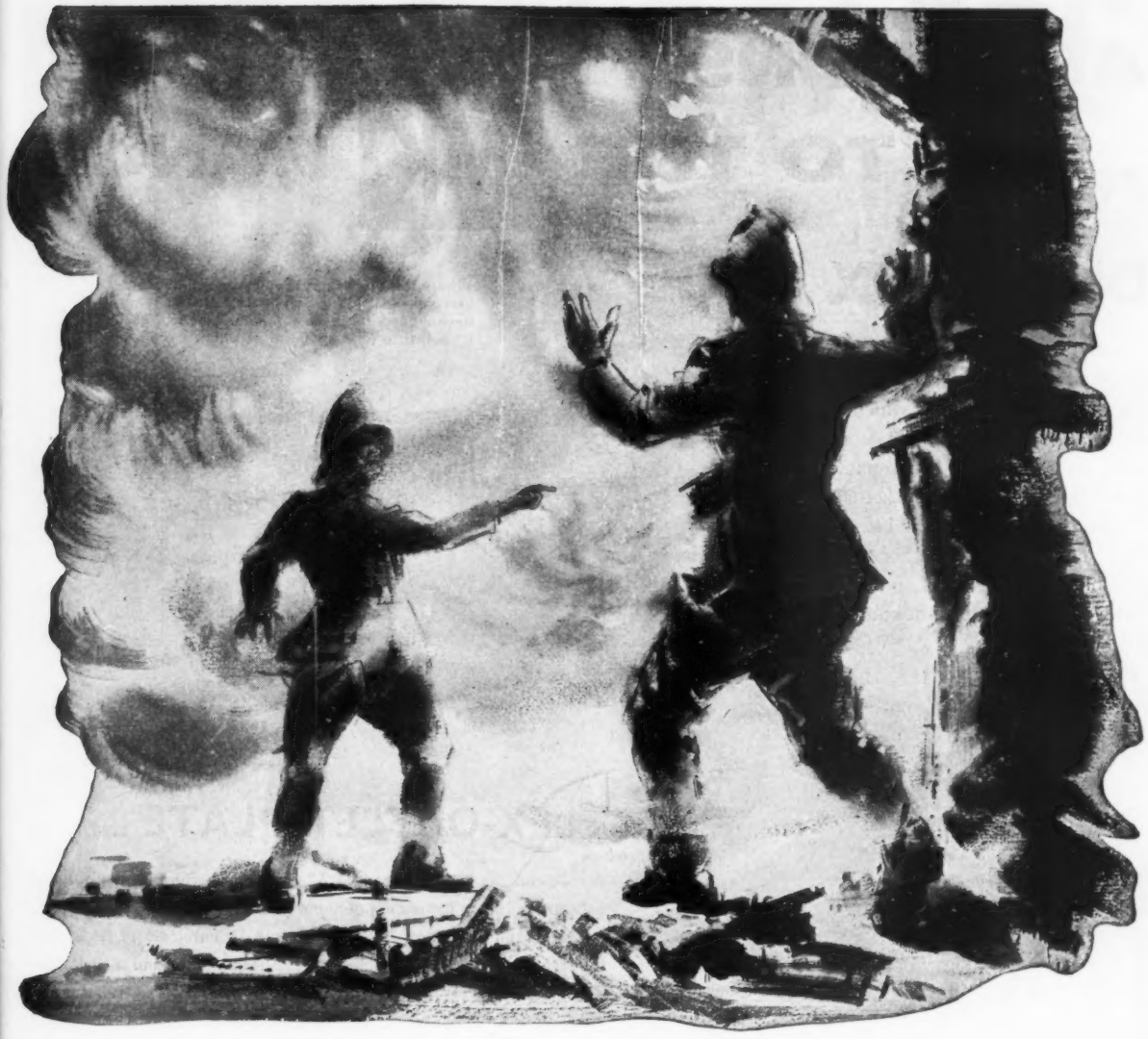


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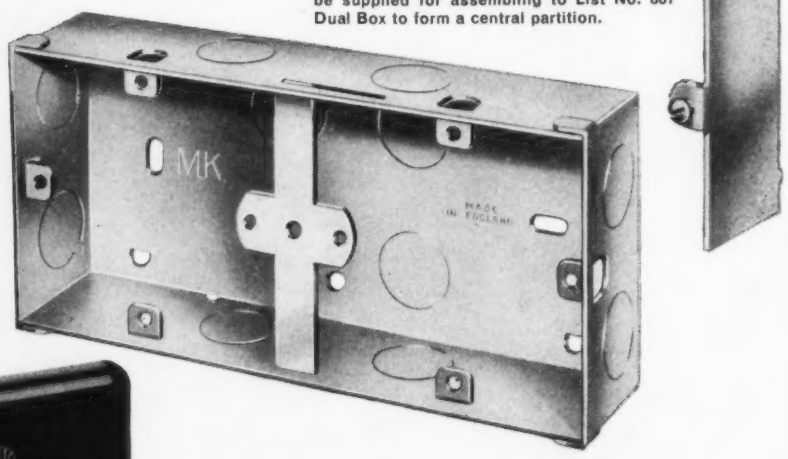
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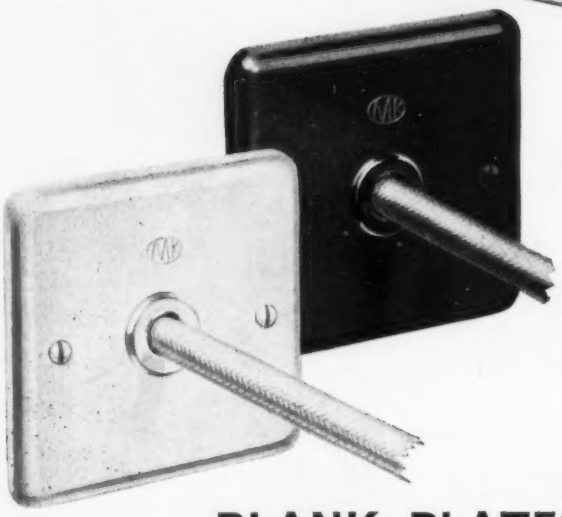
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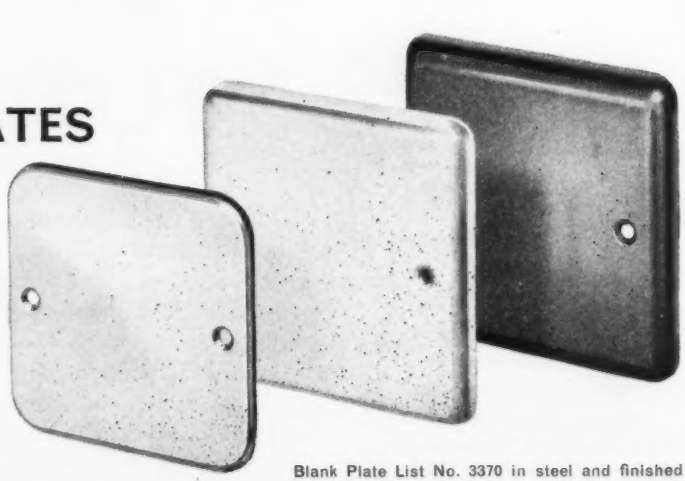


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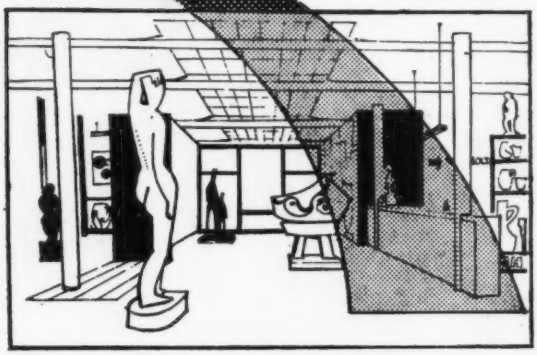
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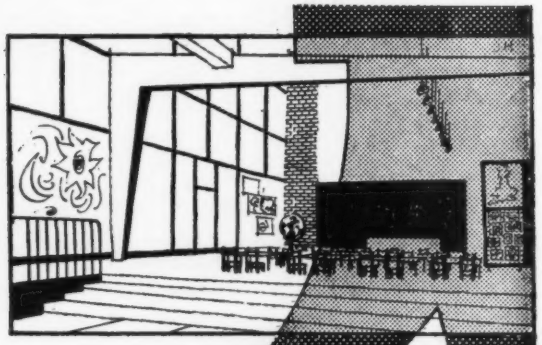
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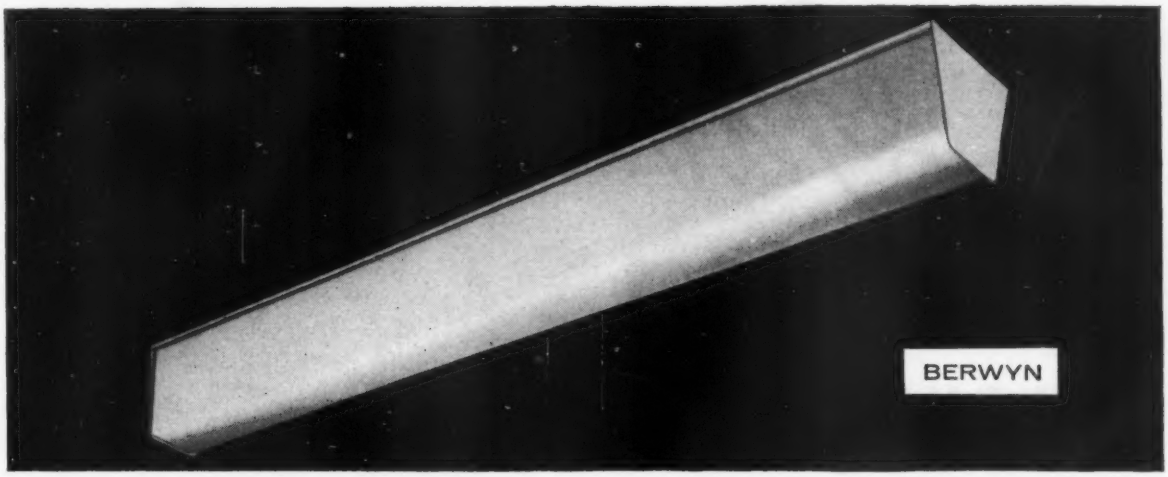
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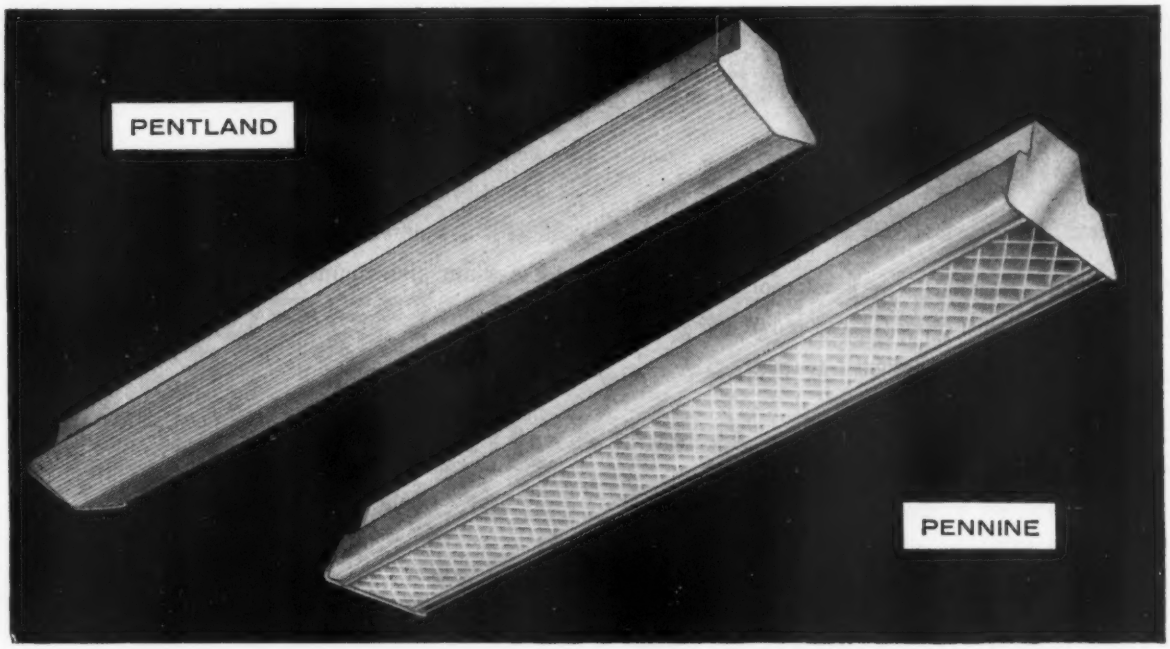
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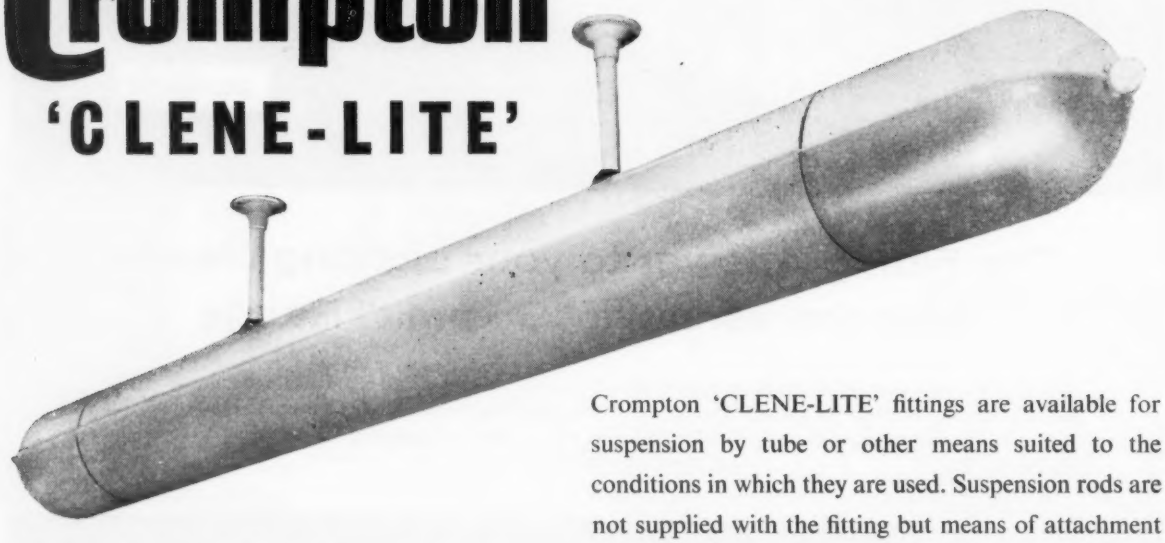
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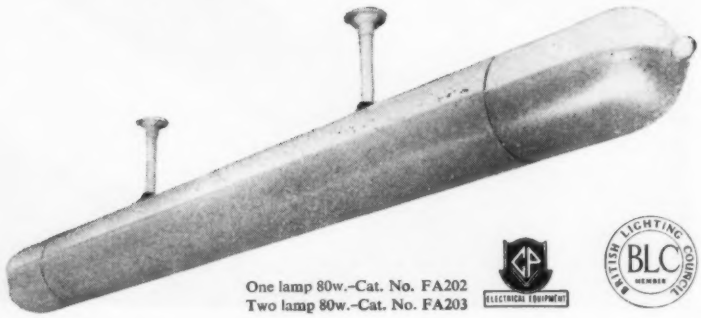
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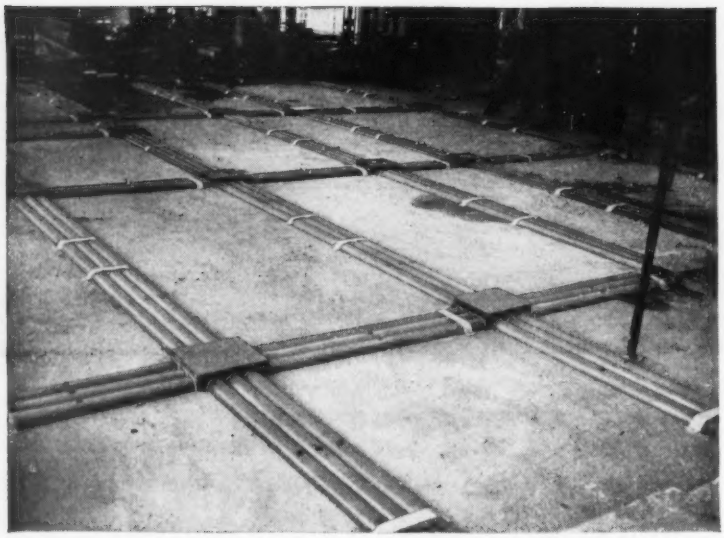
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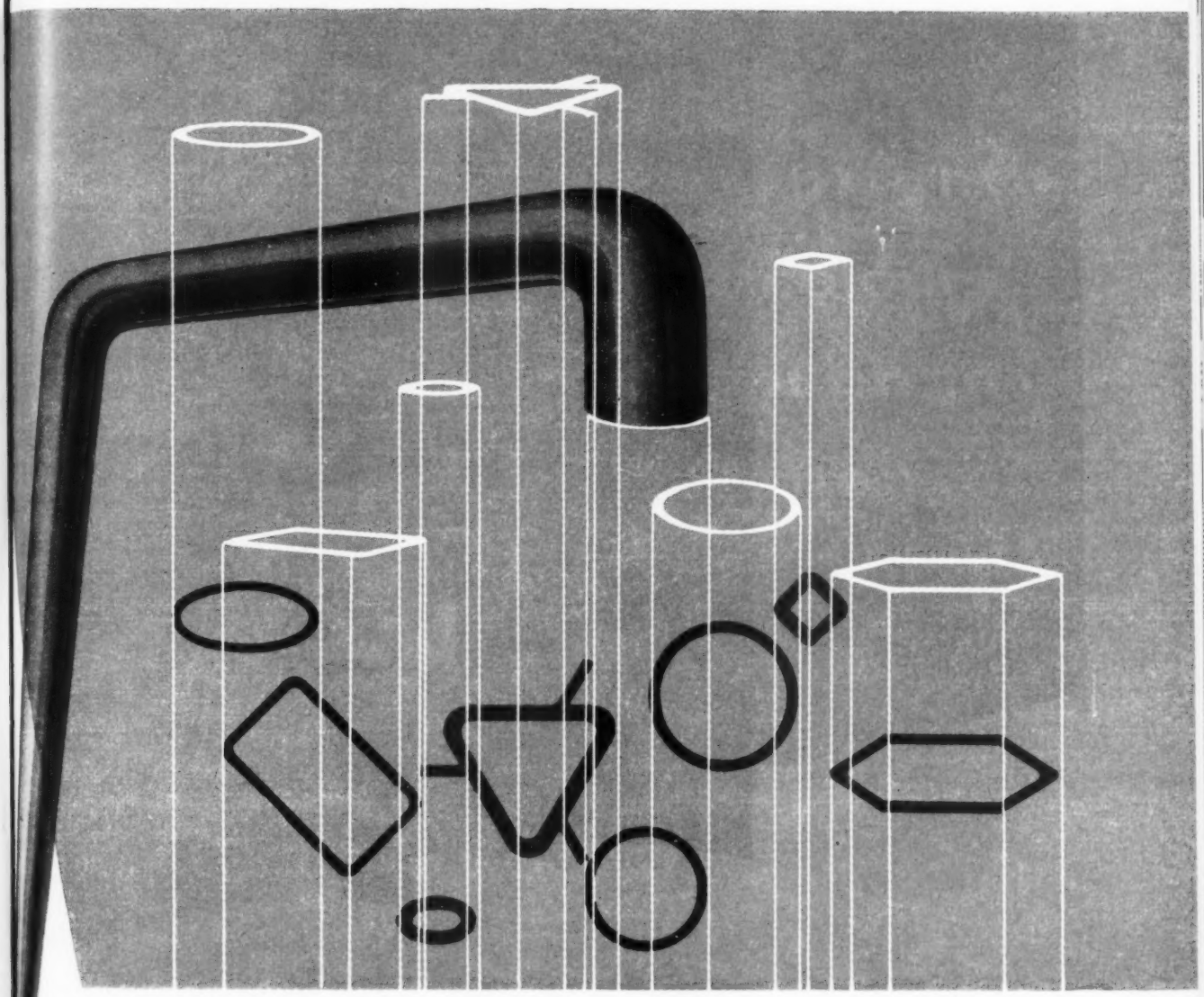
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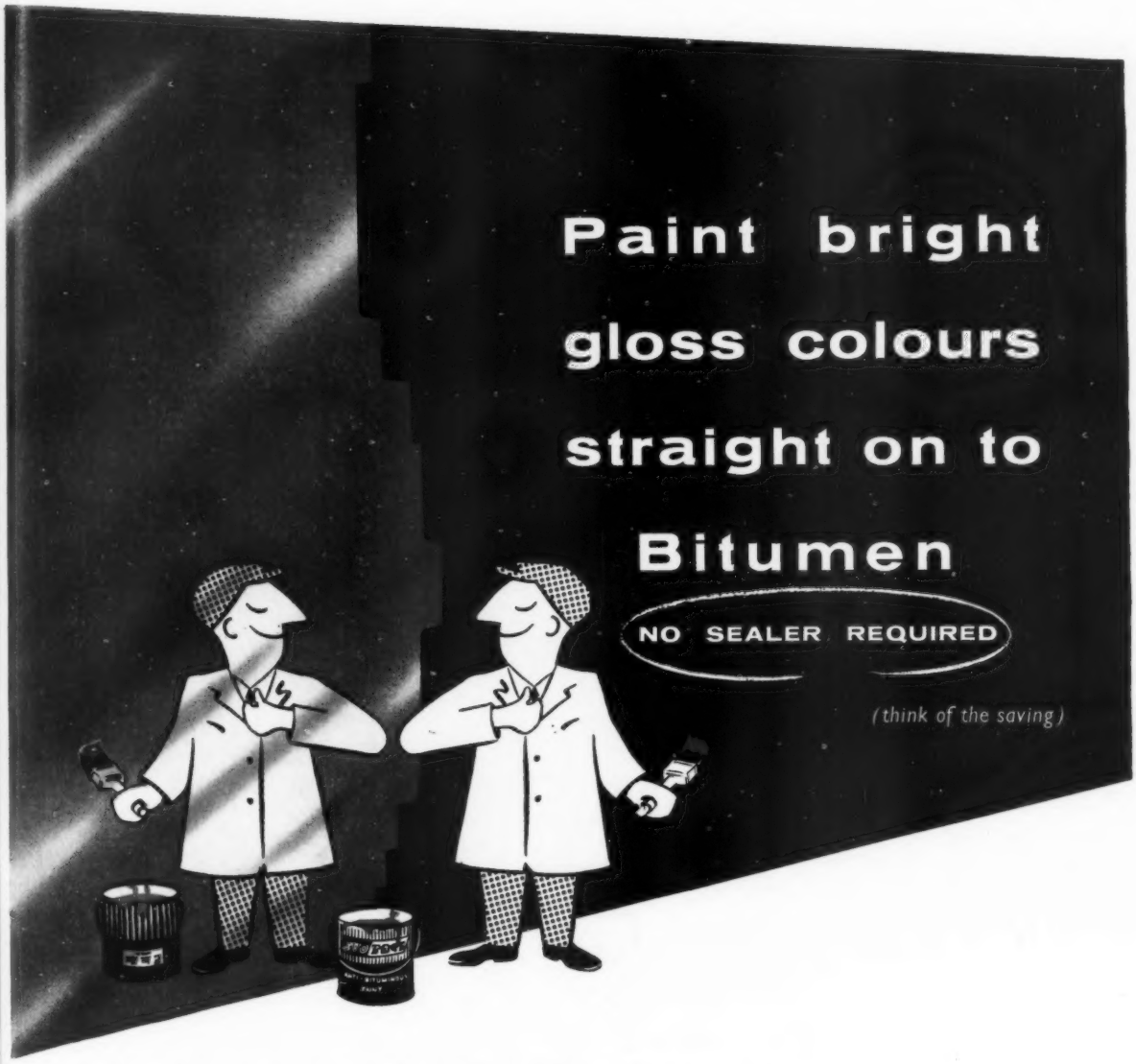
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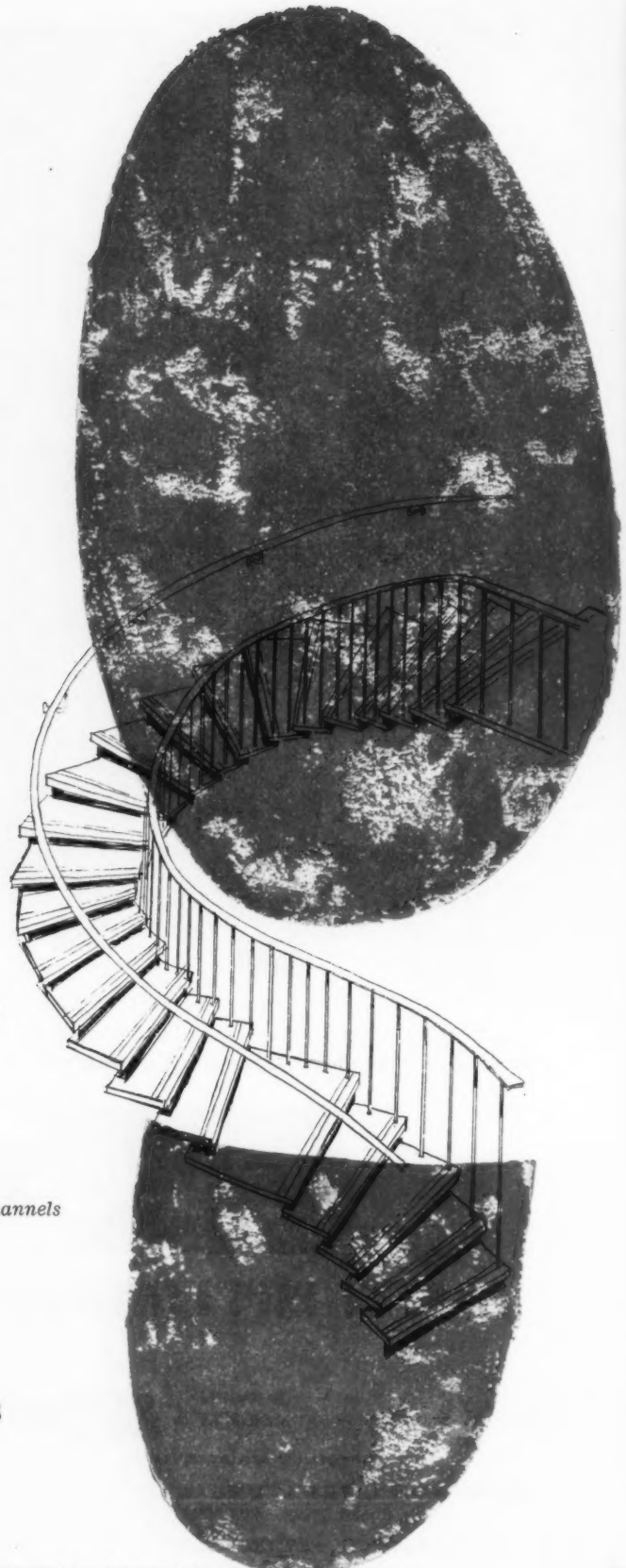
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'Ship fine on the port bow!' yelled the look-out as the shape loomed out of the fog. Full Speed Ahead telegraphed the Captain, and as the engineer made to operate the throttle—the main lighting system went dead. Disaster? Never! Nife-Neverfayle took over as smartly as the ship raced clear of collision. It wasn't without light for a second. Nife-Neverfayle never lets you down, because the power behind the system is the famous Nife steel alkaline battery. The battery that is always ready, even after years of being idle.

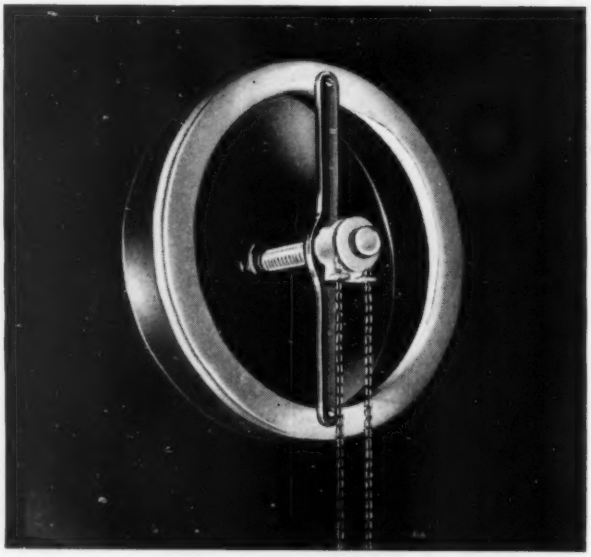
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Lighting for every emergency

Nife-Neverfayle is a great space-saver. It occupies only one third of the space required by conventional equipment. Drop us a line for full particulars: Nife Batteries, Redditch, Worcestershire.

N130

Solving Two Problems



'VENTILEX'
GLASS VENTILATORS

Patent No. 23858 *Registered design No.* 888900

This simple and highly efficient means of controlling ventilation will be appreciated in all buildings where fug, fumes, cooking smells, etc. are encountered.

Smooth in operation, the 'Ventilex' Ventilator may be completely closed or opened to any degree, ensuring accurate control of the air-flow to meet changing conditions. The frame and opening mechanism are moulded in cream plastic. The movable disc is of toughened glass. Diameter of glass disc: 9½".

The 'Ventilex' is particularly suitable for kitchens, canteens, bars, bathrooms, offices, showrooms, etc. It can be fitted to existing windows.

'INTER'

Registered design No. 888909

The Glass 'Talk-through' Window



An hygienic and fool-proof means of two-way communication for cash desks, kiosks, theatre and railway booking offices, hospitals, banks, etc.

Attractively styled in ivory plastic and toughened glass, the 'Inter' Glass Talk-through Window provides facilities for easy conversation combined with hygienic protection, eliminates draughts and is a safeguard against theft.

When not in use, the toughened glass disc is simply moved to the closed position by means of the chromium plated mechanism.

Designed and manufactured by COVER S.P.R.L., Brussels. *Sole Distributors in Great Britain:*

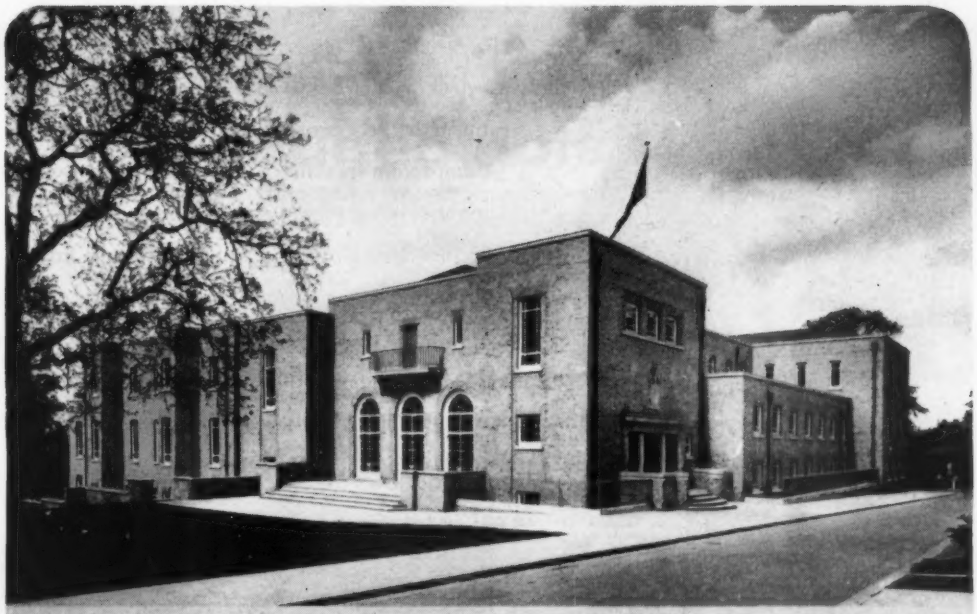
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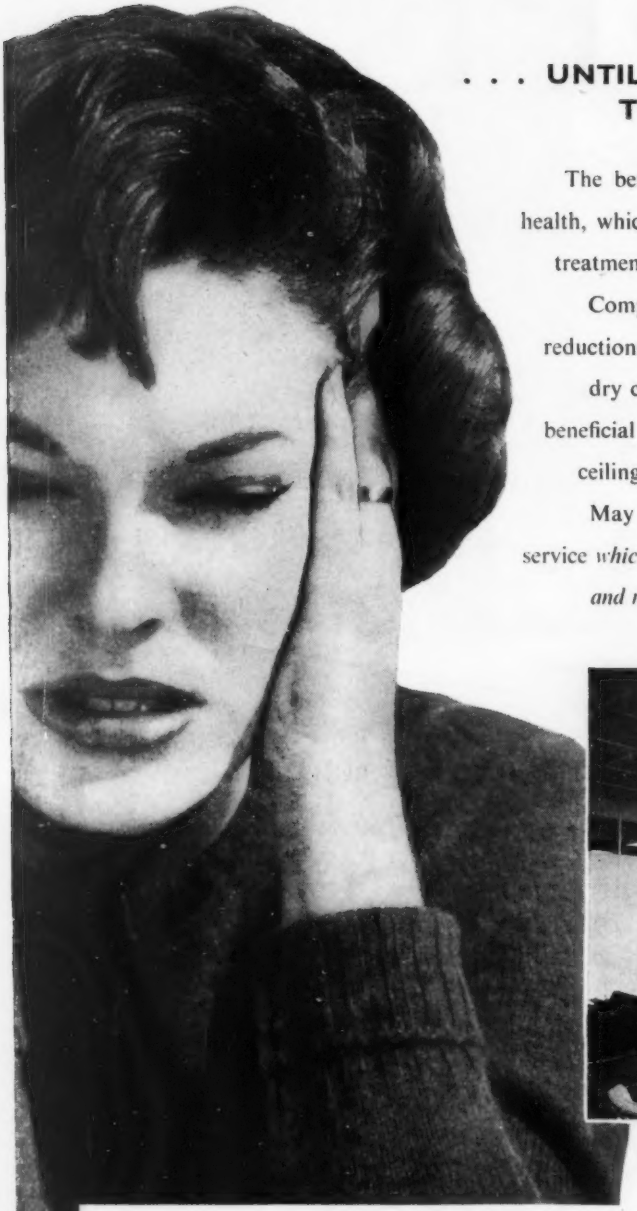
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Thomas Worthington & Sons, Architects

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I could have screamed...



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The benefits, in terms of working comfort, efficiency and health, which can be achieved by appropriate acoustical treatment are becoming more widely recognised every day.

Compactom specialise in the control of noise. Remarkable reductions *between* rooms are achieved by Compactom dry construction demountable partitions. Equally beneficial results *within* rooms are obtained by Compactom ceilings and other methods of acoustical treatment.

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A scheme by Compactom incorporating full height and free-standing partitions and Acoustic ceiling.

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Newalls (Reg'd Brand) PAXBOARD presents the architect with a first-class medium for large-area acoustic insulation.

The modern tendency to use large rooms in office blocks results in an artificially increased noise level due to numbers of people working together, and makes acoustic treatment more essential than it would otherwise be. Similarly in factories, the provision of a sound-absorbent ceiling which reduces noise, and simultaneously insulates heat more effectively than any building board, is an attractive proposition, particularly in view of the reasonable cost for an all-asbestos product.

PAXBOARD has been produced especially for this class of work.

It is ½" in thickness and available in sizes up to 6' 0" × 3' 0", has a very good efficiency (50% absorption coefficient at 500 c.p.s. — 75% at 2,000 c.p.s.), is not affected by repeated decoration and, being composed entirely of asbestos, is absolutely *fire-proof* and is rot-proof and vermin-proof.

PAXBOARD weighs less than 1-lb./sq. ft. and the larger than normal acoustic board size renders erection cheaper and more convenient.

With all these practical attributes it is small wonder that PAXBOARD is firmly established as the architect's first choice for large-area acoustic insulation.

Full technical information available on request.

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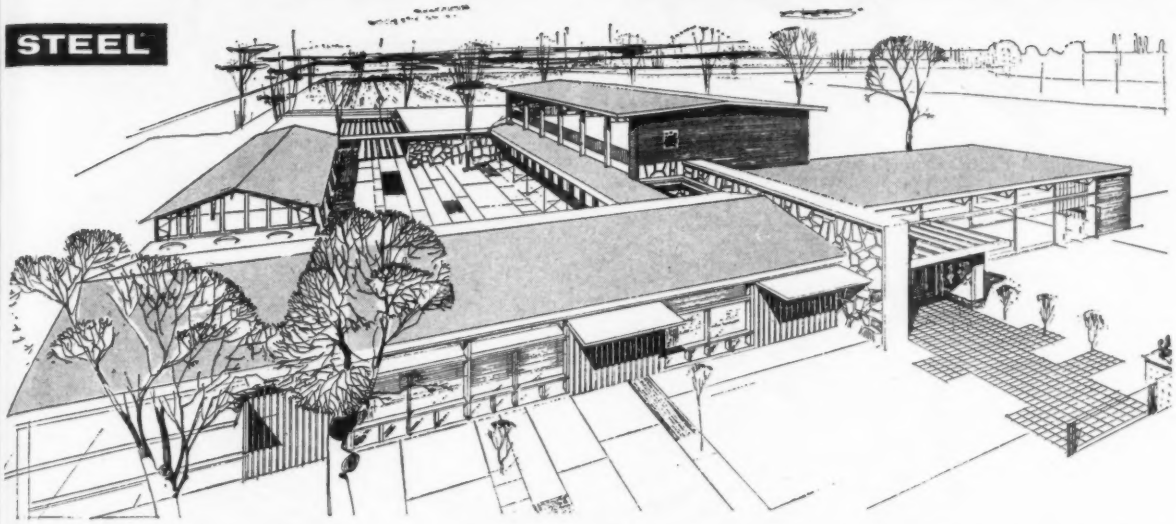
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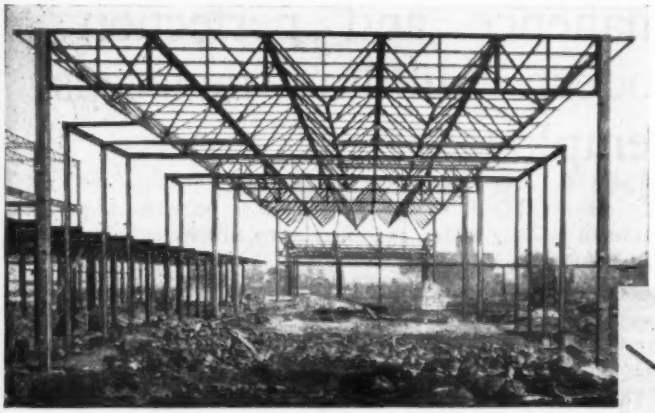
Specialists in hot water by Electricity since 1923

SCHOOLS

STEEL



HOTCHKISS LATTICE CONSTRUCTION

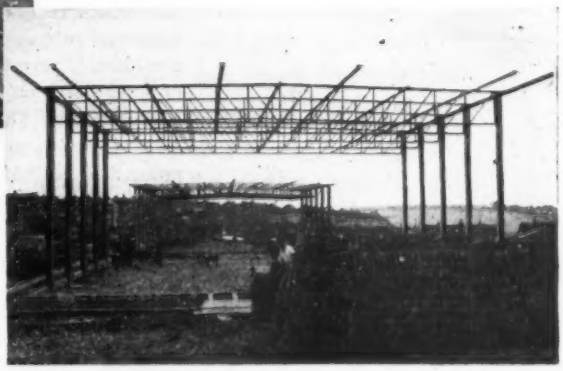


was evolved to meet today's rapidly expanding school building programme.

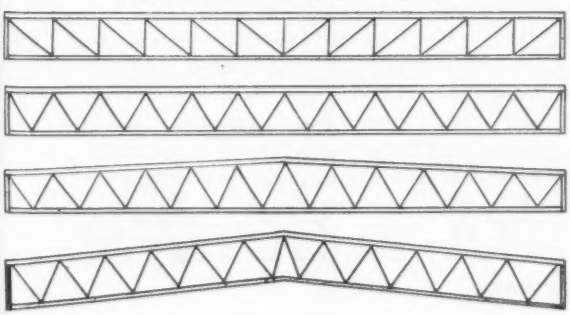
The Hotchkiss system is entirely flexible allowing Architects complete freedom of planning. All units are of welded construction and comply with British Standard Specifications (including B.S.449).

Catalogue L.G. 11 free upon request.

Above: Gravesend Gordon School for Kent County Council. Architect Elie Mayorcas, F.R.I.B.A. Right: Lewsey Road and Ashcroft Schools, Borough of Luton. Architect M. H. G. Blackman, A.R.I.B.A.



A FEW OF THE BASIC LATTICE GIRDERS



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THE ARCHITECT: As the aggregate is pre-mixed in the factory, strict adherence to specification is always assured. As this aggregate is Perlite, a considerable saving in dead-load may be achieved, so vital in the planning of multi-storey projects.

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LUXFER

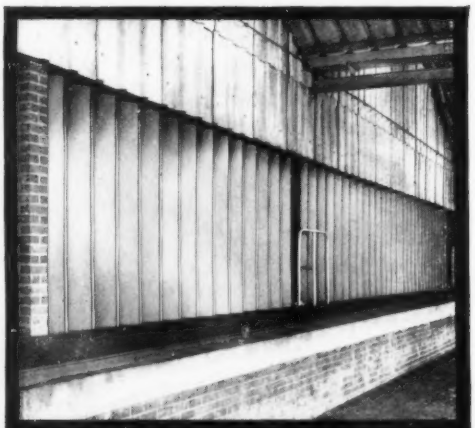
LUXFER LIMITED · WAXLOW ROAD · LONDON · N.W.10

Telephone : ELGar 7292-8 *Telegrams : Luxfer · Harles · London*

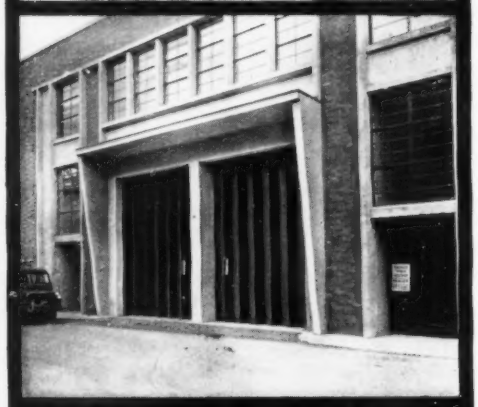
BOLTON

COLLAPSIBLE SHUTTER DOORS

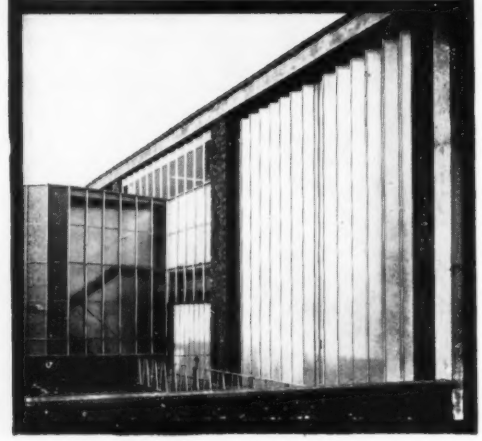
Recent Bolton Patent Shutter Door installations in Cardiff include : Wonder Bakery Ltd., Maindy ; Elliots Wire Rope Works, Collingdon Rd. ; J. Lyons & Co., Ltd., Newport Rd.



1



2



3

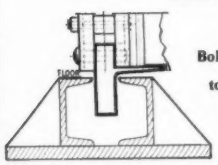
The illustrations show how versatile the Bolton Patent Shutter Door really is and installations everywhere are giving lasting trouble-free service. The doors are craftsman built from tested materials to a design which has never been bettered and hand or power operation may be had for any situation. Some of the details of the design and reasons for the popularity of Bolton Patent Shutter Doors will be seen from the diagrams.

1. Two hand operated doors fitted to a loading bay for the British Oxygen Co. Ltd., Carlisle.
2. Two electrically operated doors at Metropolitan-Vickers Electrical Co. Ltd., Manchester.
3. One pair of electrically operated doors at a test bed for the Bristol Aeroplane Co.

The illustration right shows a partly bunched Bolton Patent Shutter Door at Onehunga War Memorial Swimming Pool, New Zealand.

For full details write now for our comprehensive Catalogue No. AJ306.

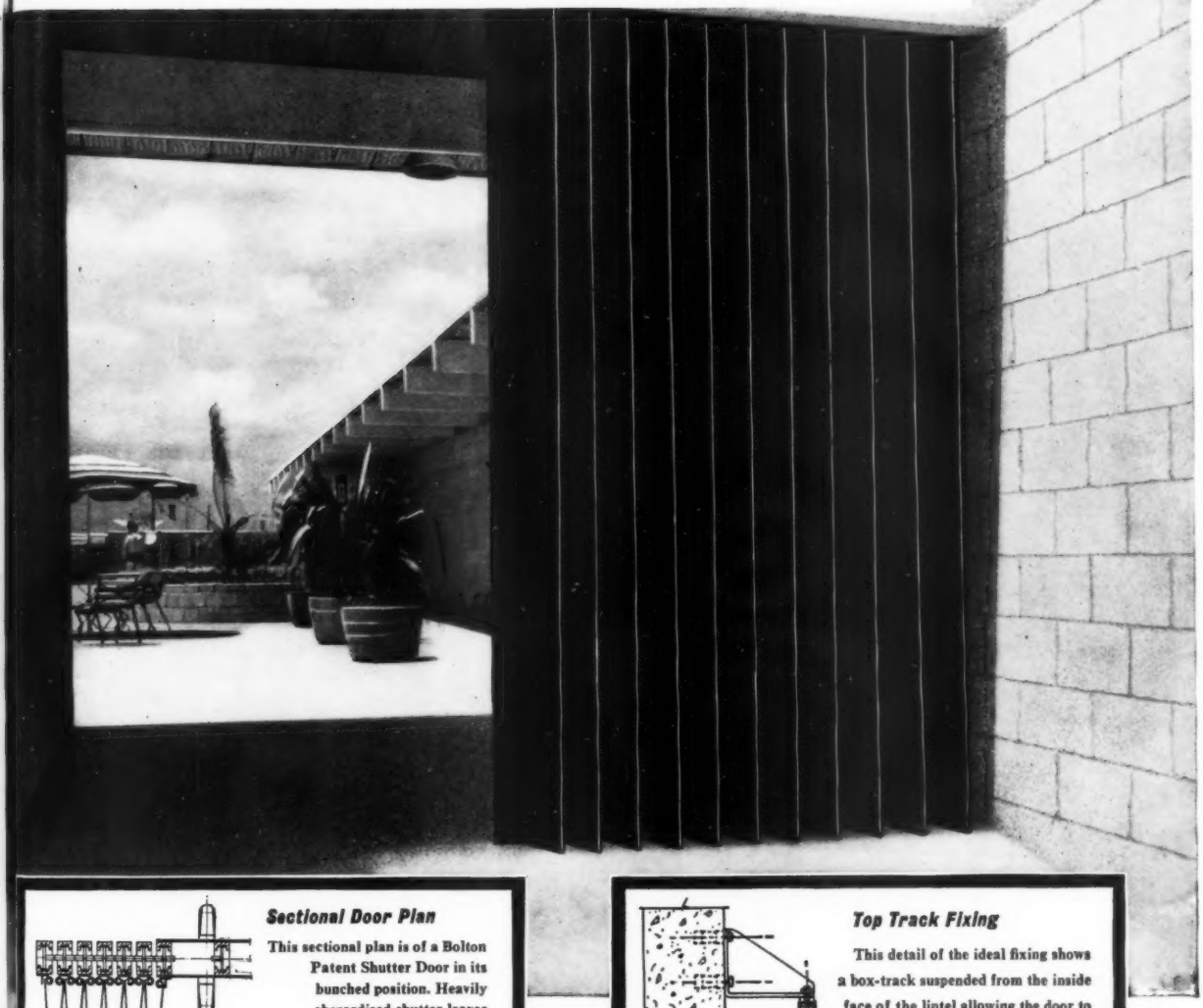
Bottom Track

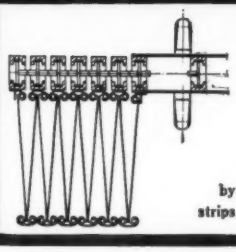


This is purely a location guide since Bolton Patent Shutter Doors are entirely top hung. The bold outline indicates the bottom guide piece which supports the heavily sherardised leaves.

BOLTON GATE COMPANY

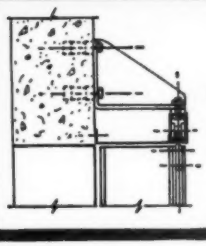
FOR EVERY TYPE OF OPENING





Sectional Door Plan

This sectional plan is of a Bolton Patent Shutter Door in its bunched position. Heavily sherardised shutter leaves are curled round ¼" dia. wire reinforcement and are connected by full height bronze or alloy hinging strips. Steel pickets are at the rear side.



Top Track Fixing

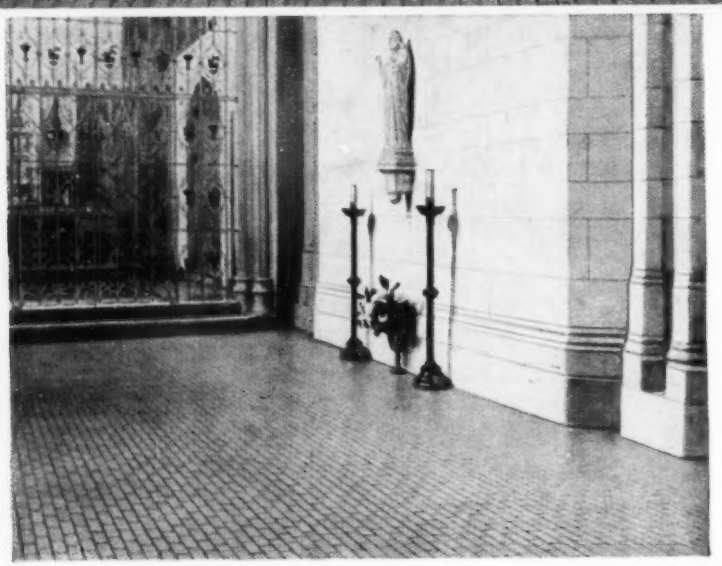
This detail of the ideal fixing shows a box-track suspended from the inside face of the lintel allowing the door to bunch clear of the opening. Other arrangements can be made to suit your particular needs.

LIMITED BOLTON LANCASHIRE *The BIG name in doors*

Branches at Belfast, Birmingham, Bristol, Dublin, Liverpool, London, Manchester, Newcastle-on-Tyne.

dm 8G 306





Architect
Romilly B. Craze of Milner & Craze, FF.R.I.B.A.

Photographed by kind permission of Canon B. J. Bogan —Cathedral Administrator.

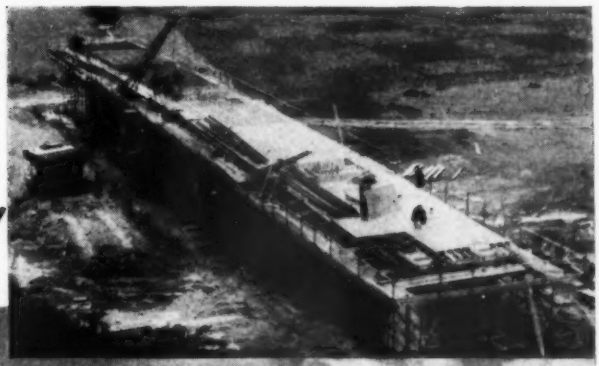
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The job called for a material that was strong, tough and flexible — yet light and easily handled. Seaboard Canadian Fir Plywood met all these requirements — and more!

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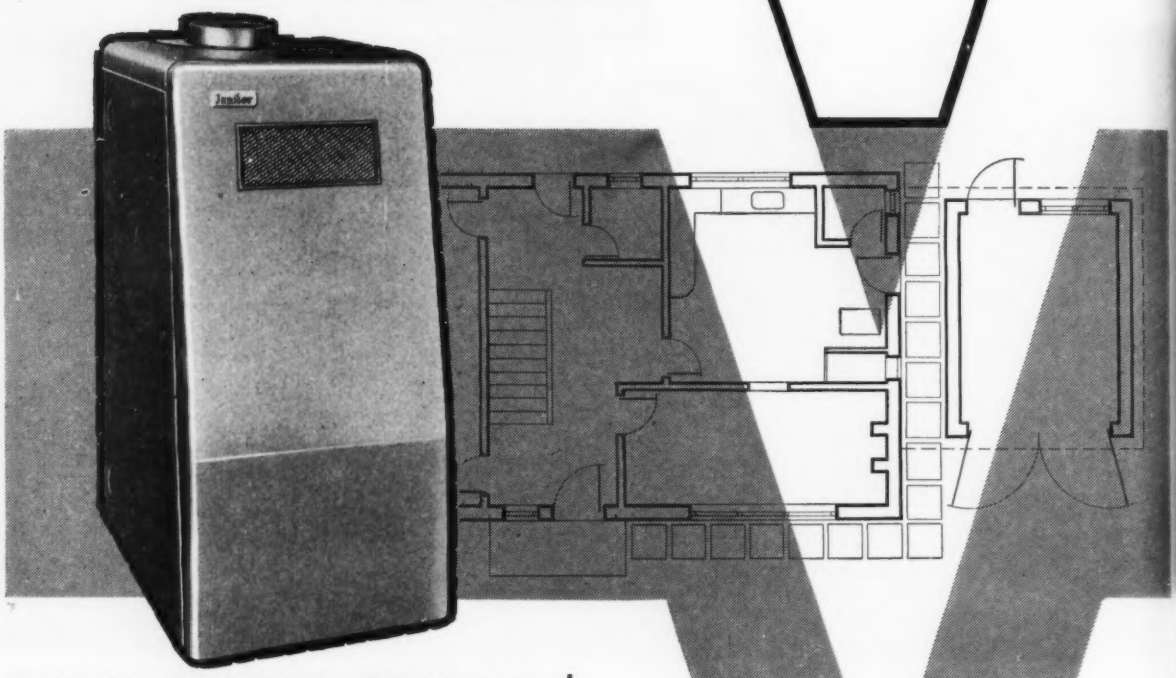
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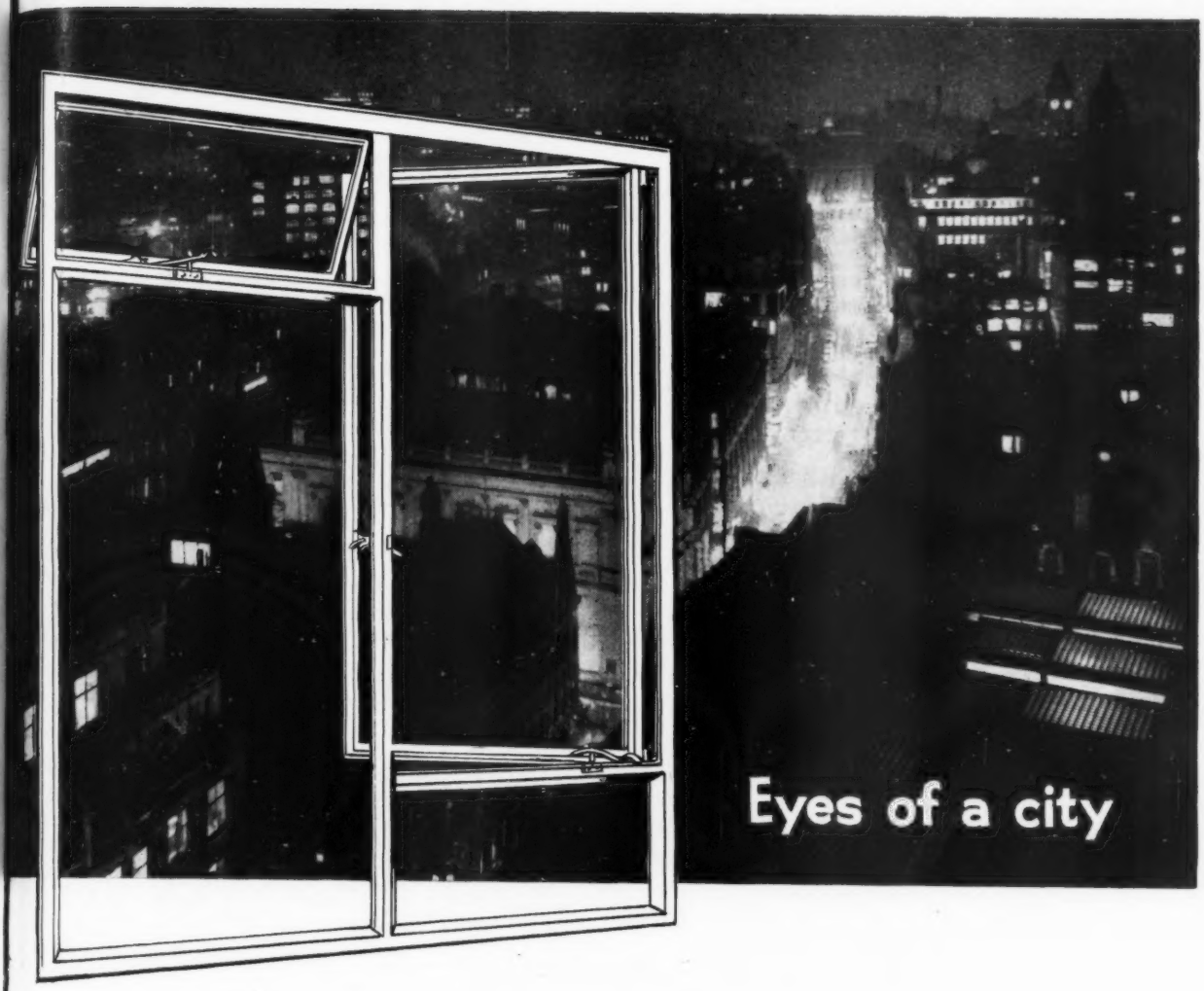
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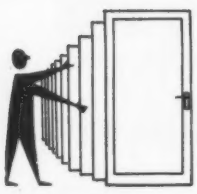
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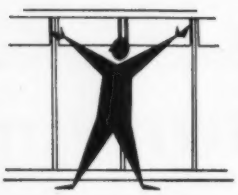


opening up better ways of closing in!

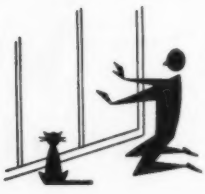
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A great range of panel and door units
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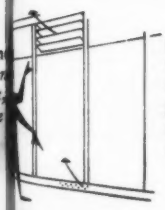


odular partitioning

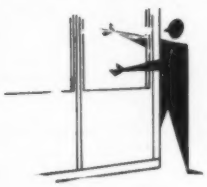
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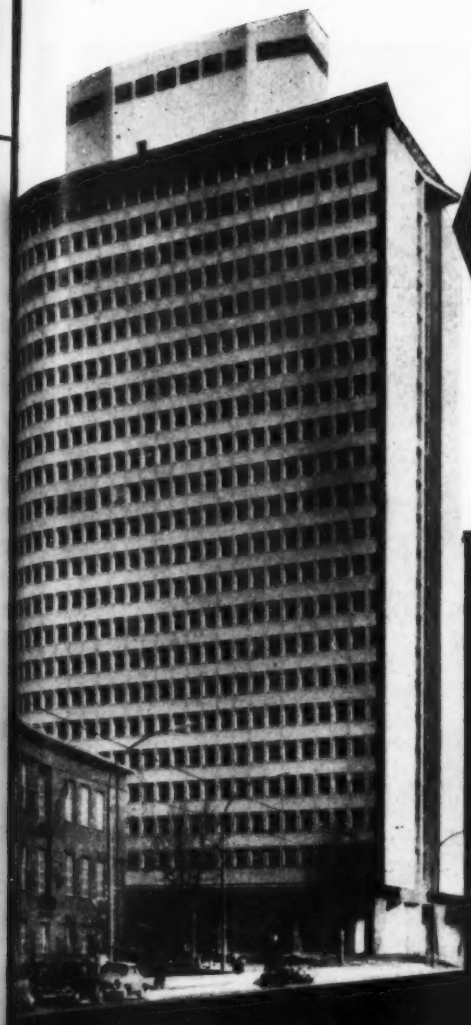
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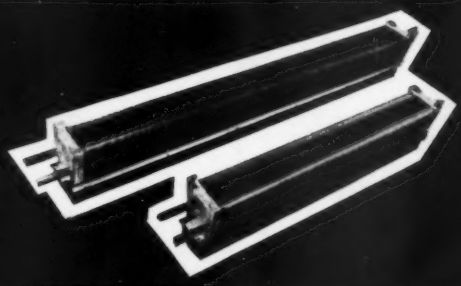
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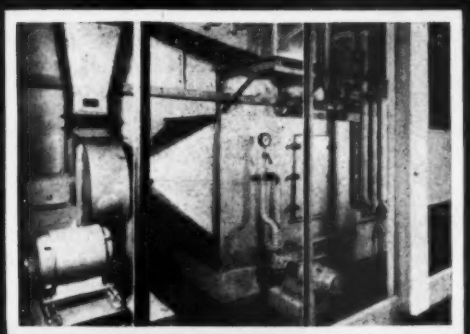
AIR CONDITIONING
with
SULZER
INDUCTION TYPE
AIR CONDITIONING CONVECTORS



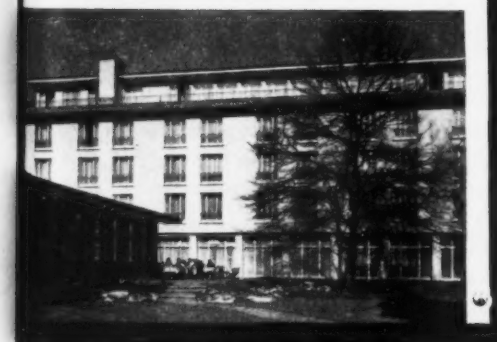
Reduces diameters of air ducts by 70%



Low level convectors require minimum space



Requires air treatment plant half the size of conventional plant



Illustrated above is a multi-story office block and a hotel equipped with Sulzer air conditioning convectors

Further advantages:-

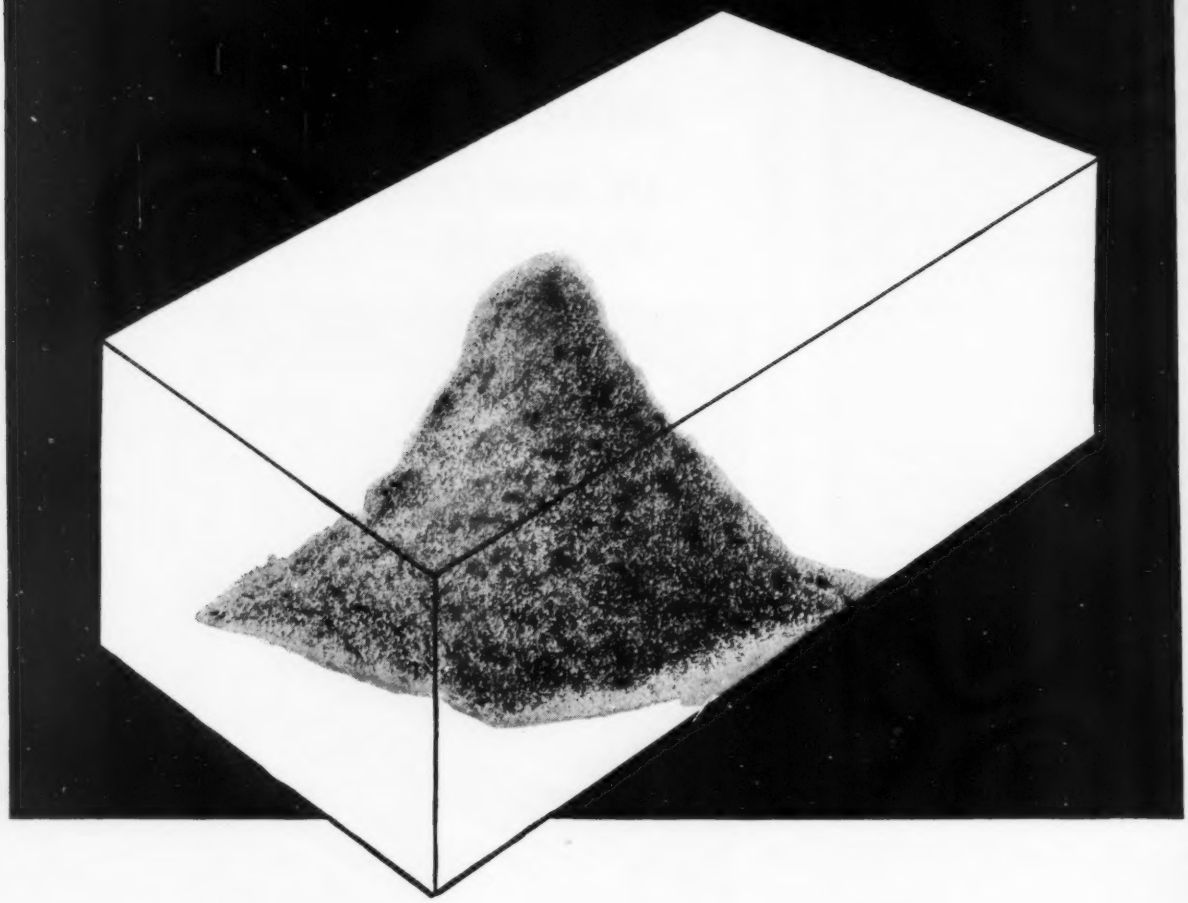
Convectors work as normal radiators in off periods.
Sulzer convector system is practically noiseless in operation.
Ideal for individual regulation of sections or single rooms.

Write for information to:-

SULZER BROS. (LONDON) LTD.
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Want to make something of it?





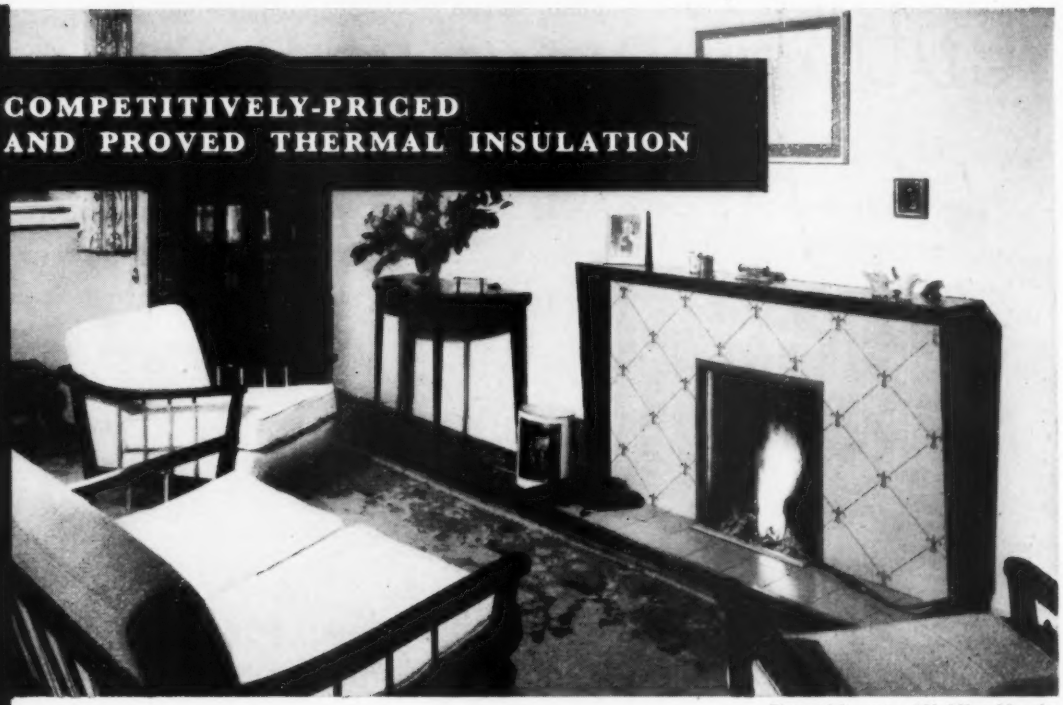
As well as making top quality sand lime, concrete and refractory bricks, the Sutcliffe, Speakman EMPEROR Press makes bricks from clinker, burnt shale, slag, etc. – once considered useless waste. They're good quality bricks, consistent and always well formed.
The EMPEROR Press comes in various sizes – the Duplex exerts a pressure of 200 tons and can make 3,000 bricks an hour, operating round the clock. Sutcliffe, Speakman are specialists in this type of work. They supply a complete range of plant and equipment, and can undertake the erection of complete brickworks and hand them over in working order. And they are always happy to advise you.

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COMPETITIVELY-PRICED AND PROVED THERMAL INSULATION



Photograph by courtesy of Ideal Home Magazine.

At "New Britwell", a house at Maidenhead. *Architect:* Michael H. H. Bayley, A.R.I.B.A.

PRACTICAL CONSTRUCTION

ROOF
Tiles on felt
2-3 inches slag wool.

CEILINGS
Plasterboard and skim coat.

EXTERNAL WALLS
Ground floor: 4½-in. brickwork, 2-in. cavity, 4-in. Thermalite, two-coat plaster.
First floor: Tyrolean rendering, 3-in. Thermalite, 2-in. cavity, 4-in. Thermalite, two-coat plaster.

PRACTICAL CONSIDERATION

The owner writes regarding the efficiency of the Thermal insulation.

'The only further comment that I can add after nearly three years' occupation is that the heating system was unnecessarily large, the bedroom radiators only being used occasionally and it is only during very cold spells that it has to be stoked more than every other day."

PRACTICAL CONFIRMATION

The thermal conductivity (k) of cellular concrete of 50 lbs. cu. ft. density according to the I.H.V.E. guide 1955 conditioned at 64° F/65%R.H. = 1.4 B.T.U.'s etc. This corresponds to the normal conditions in the average heated home during the winter months where a Thermalite inner leaf will have an equilibrium moisture content of approximately 4%

THERMALITE YTONG LIMITED
Hams Hall, Lea Marston, Sutton Coldfield, Warwickshire. Telephone: Coleshill 2081.

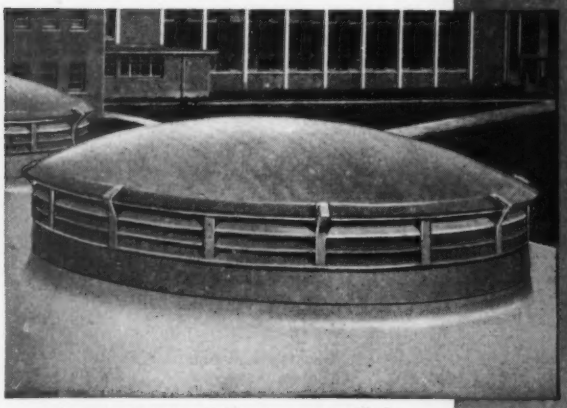
A LAING COMPANY

THERMALITE
Loadbearing Insulating Building Blocks

Ventilation *plus* daylight

WITH GREENWOOD-AIRVAC ROOFLIGHT VENTILATORS

Specifically designed to give both low overall height and unobtrusive appearance, the Greenwood-Airvac patented range of Dome and Continuous Rooflight Ventilators provides fully weathered controllable or permanent ventilation with maximum daylight.



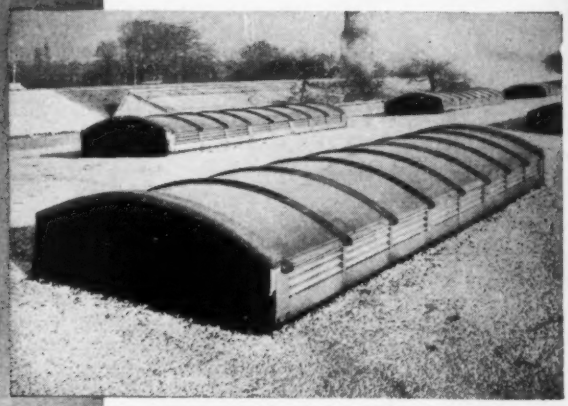
Circular Dome ventilators are supplied from 18" diameter to 72" diameter. This is one of a number of units installed at the Gormanstown Franciscan College, Co. Meath. (*Architect: John C. Thompson B. Arch., A.R.I.B.A.*)



Rectangular dome ventilators are available from 30" x 30" to 48" x 72". Large numbers have been specified by the Chief Architect at Crawley New Town. (*Chief Architect: H. S. Howgrave-Graham A.R.I.B.A., A.M.T.P.I.*)



This Half Dome End Continuous Rooflight Ventilator is one of twenty 8' 0" x 4' 0" units at S.E.G.B. Belvedere Generating Station, Kent. Available in extended lengths from 8 ft. with nominal widths up to 6 ft. (*Architects: Farmer & Dark F/F.R.I.B.A.*)



Gable End Continuous Rooflight Ventilators 16 ft. long x 5 ft. 2 ins. wide were installed on the Textile Paper Tube Factory, Romilly, Cheshire. Supplied in extended lengths from 4 ft. with nominal widths up to 7 ft. (*Architects: Arthur Swift & Partners.*)

Illustrated technical leaflets on the full range of Dome and Continuous Rooflight Ventilators are available on request.

Greenwood-Airvac *ventilation*

GREENWOOD'S AND AIRVAC VENTILATING COMPANY LTD

ESTABLISHED 1879.

PATENTEES, DESIGNERS AND MANUFACTURERS OF NATURAL AND MECHANICAL VENTILATING EQUIPMENT

BEACON HOUSE, KINGSWAY, LONDON, W.C.2
CHANCERY 8135 (4 lines). 'Grams: 'AIRVAC', LONDON



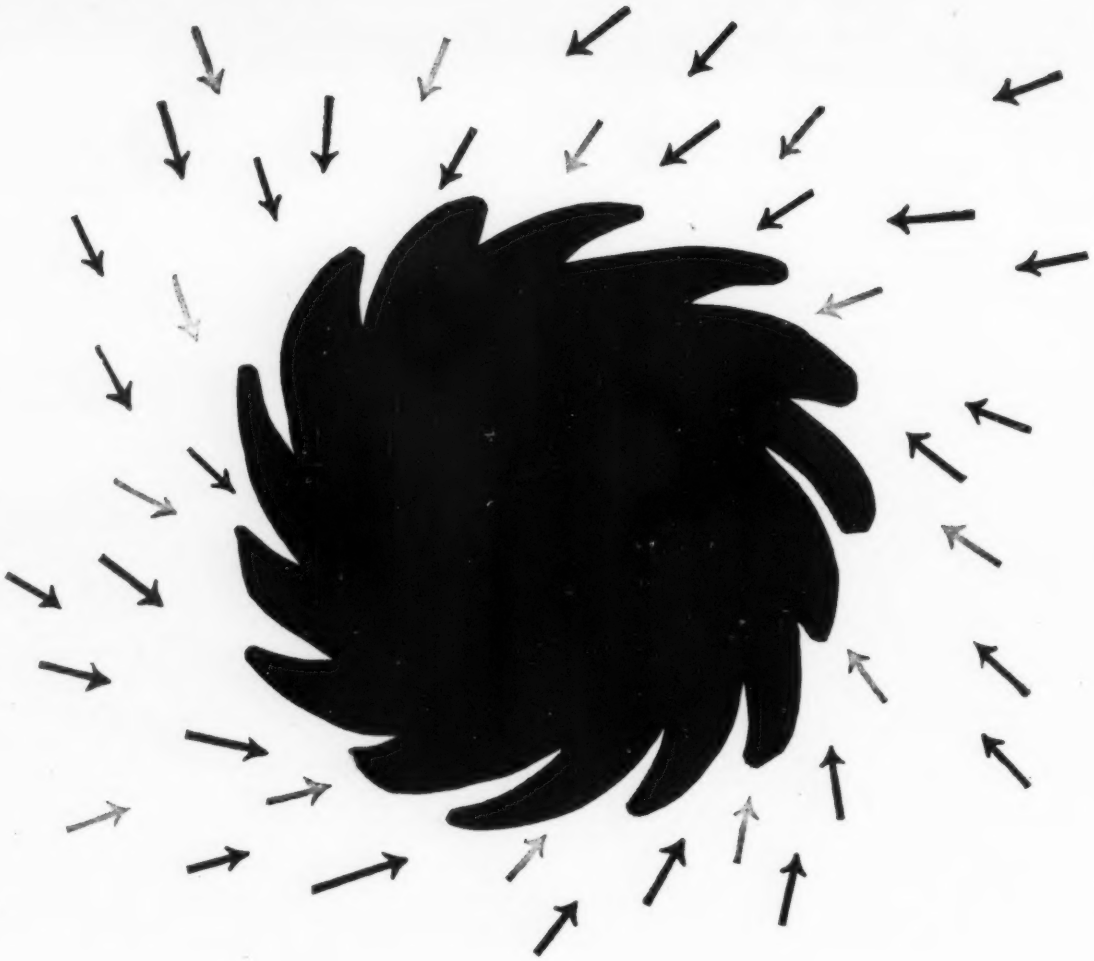
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in ONE spray application

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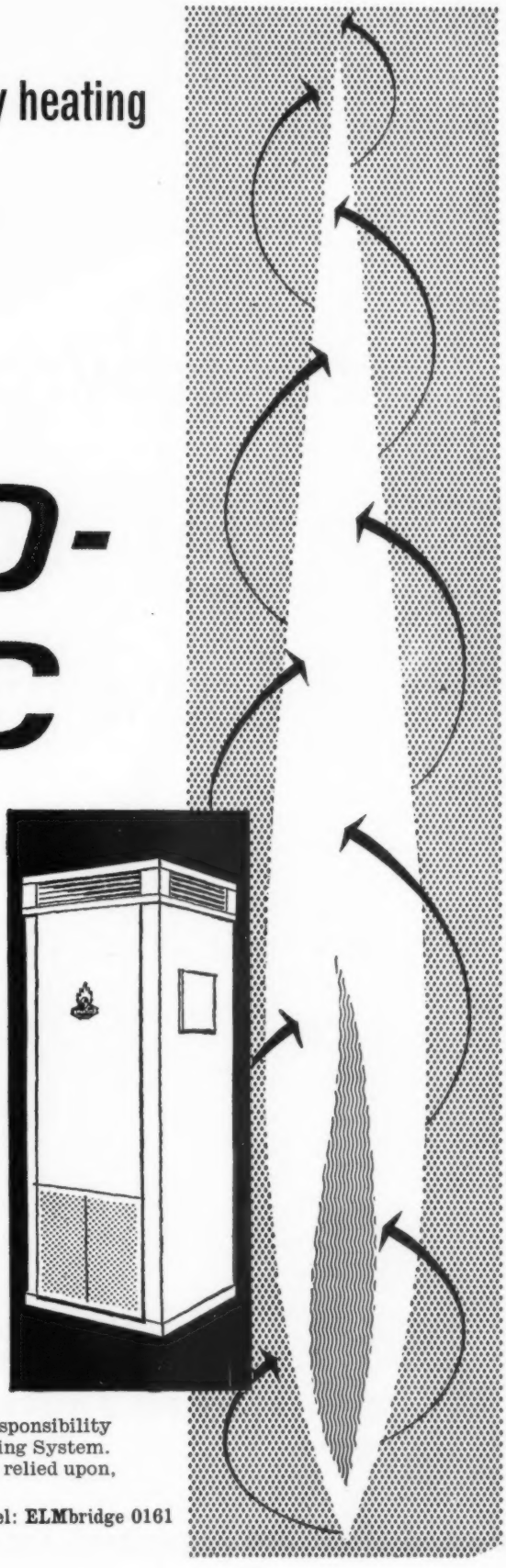
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- Simple two switch control.

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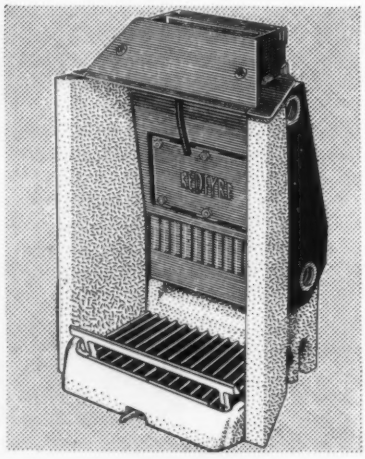
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Redfyre 60

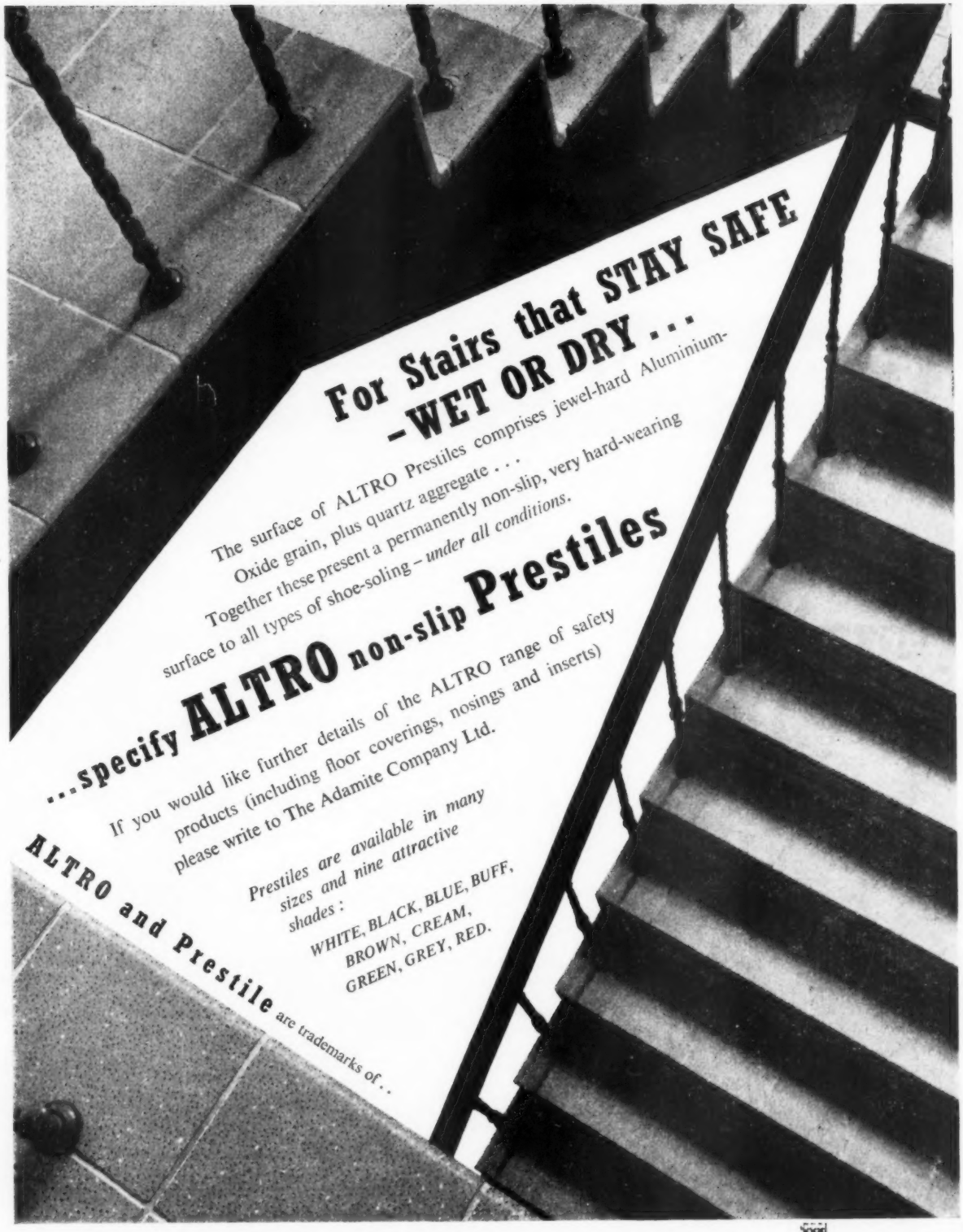


Hearth Redfyre

THAT'S WHAT MAINTENANCE PEOPLE SAY — and that's why huge numbers go into new homes every week. And now there are two *new* Ministry-approved Bacboiler fires—the Hearth Redfyre with under-floor air-feed; and the low-cost Redfyre 60, a controlled-burning fire accepted by the Council of Industrial Design. Both have exceptionally pleasing modern lines. And both (like all the Bacboiler range) supply ample hot water *and* heat one or two radiators—or up to four if hot water isn't needed. May we send you full details?

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. . . a fissured tile with high sound absorption . . . so light that it can be adhered to any background . . . and it won't burn

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Gyptone Acoustic Tiles to 2" x 1" battens at 12" centres	0.15	0.35	0.75	0.80	0.85	0.85
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'GYPROC' IS THE REGISTERED TRADE MARK OF GYPROC PRODUCTS LIMITED

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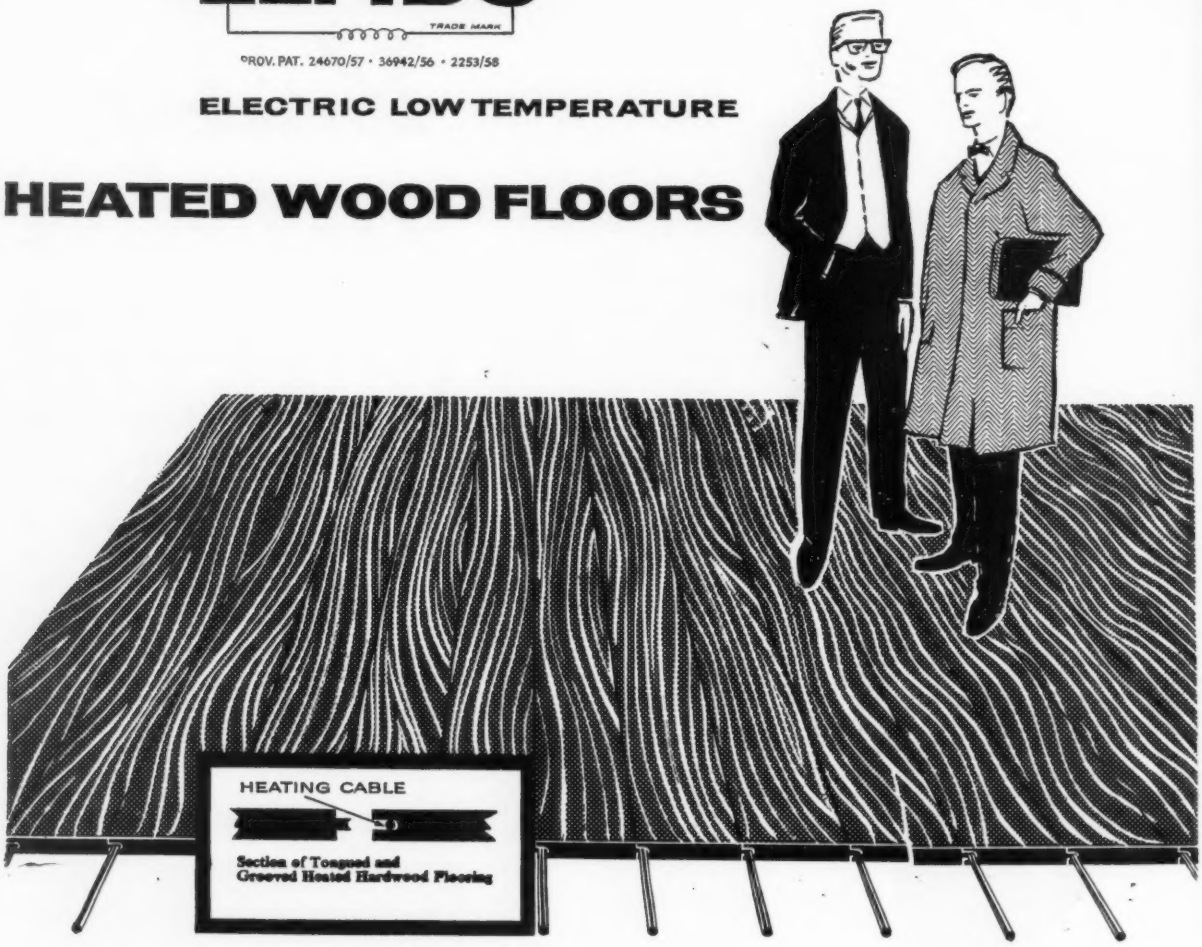
ELFIDO

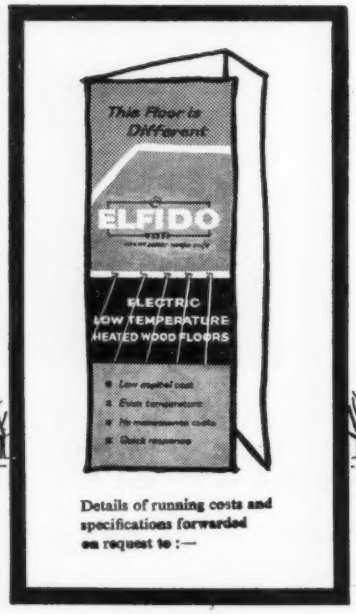
TRADE MARK

PROV. PAT. 24670/57 · 36942/56 · 2253/58

ELECTRIC LOW TEMPERATURE

HEATED WOOD FLOORS





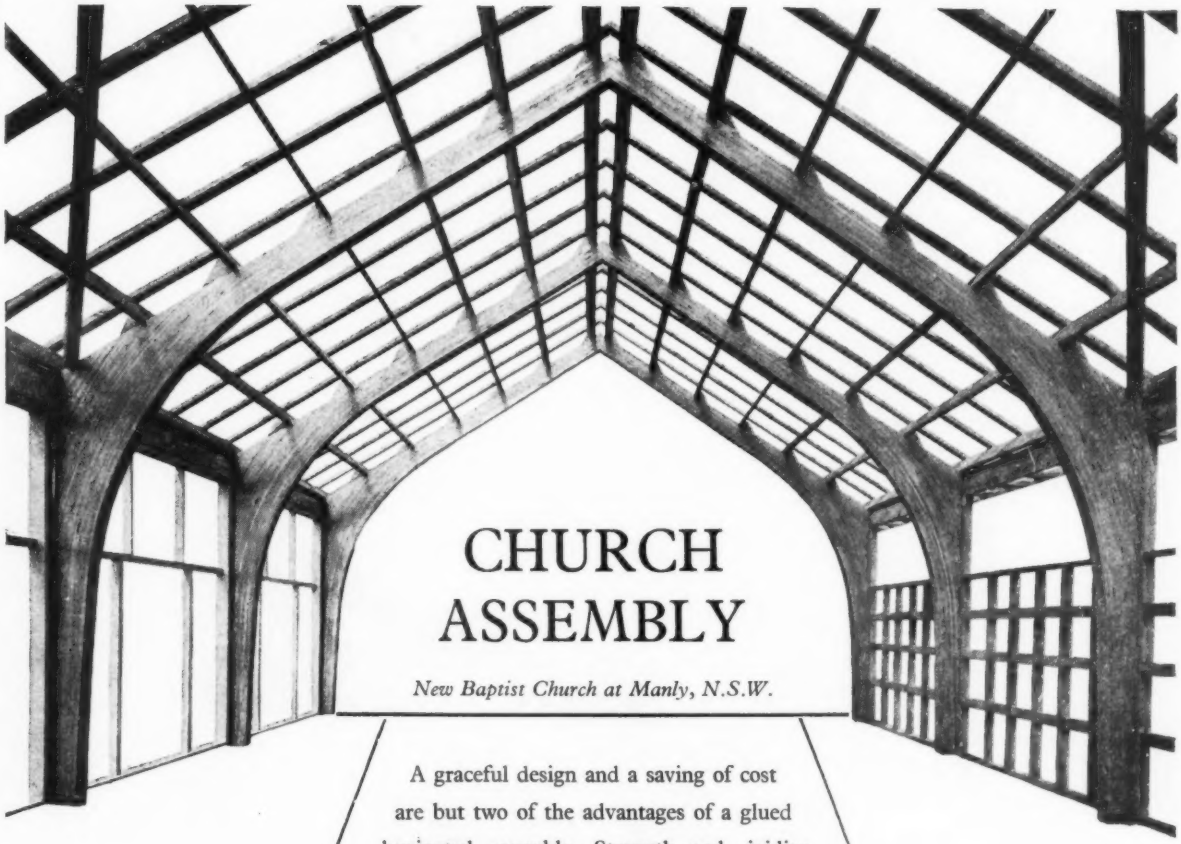
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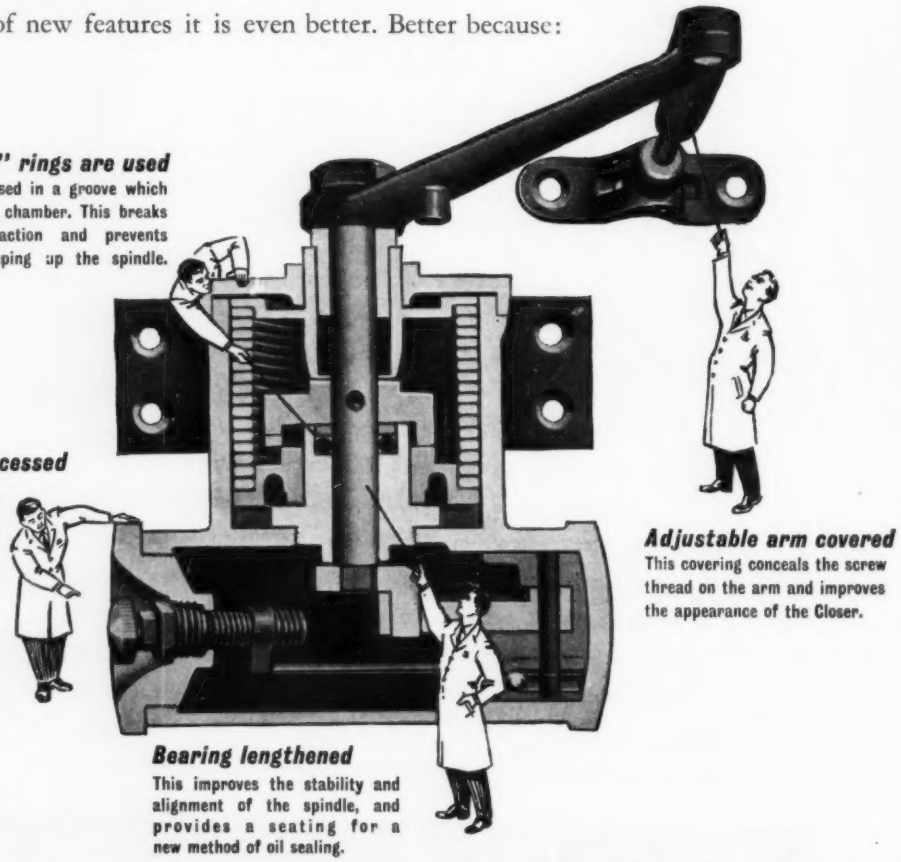
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Door Closer MK III

The Inside Story The "Briton" Door Closer is well known. For years it has been the best in the World. Now, with the introduction of new features it is even better. Better because:

Rubber "O" rings are used
These are housed in a groove which creates an air chamber. This breaks capillary attraction and prevents oil from creeping up the spindle.

Check regulator recessed
This improves the appearance of the Closer, and removes all possibility of damage either before or after it is fitted to the door.



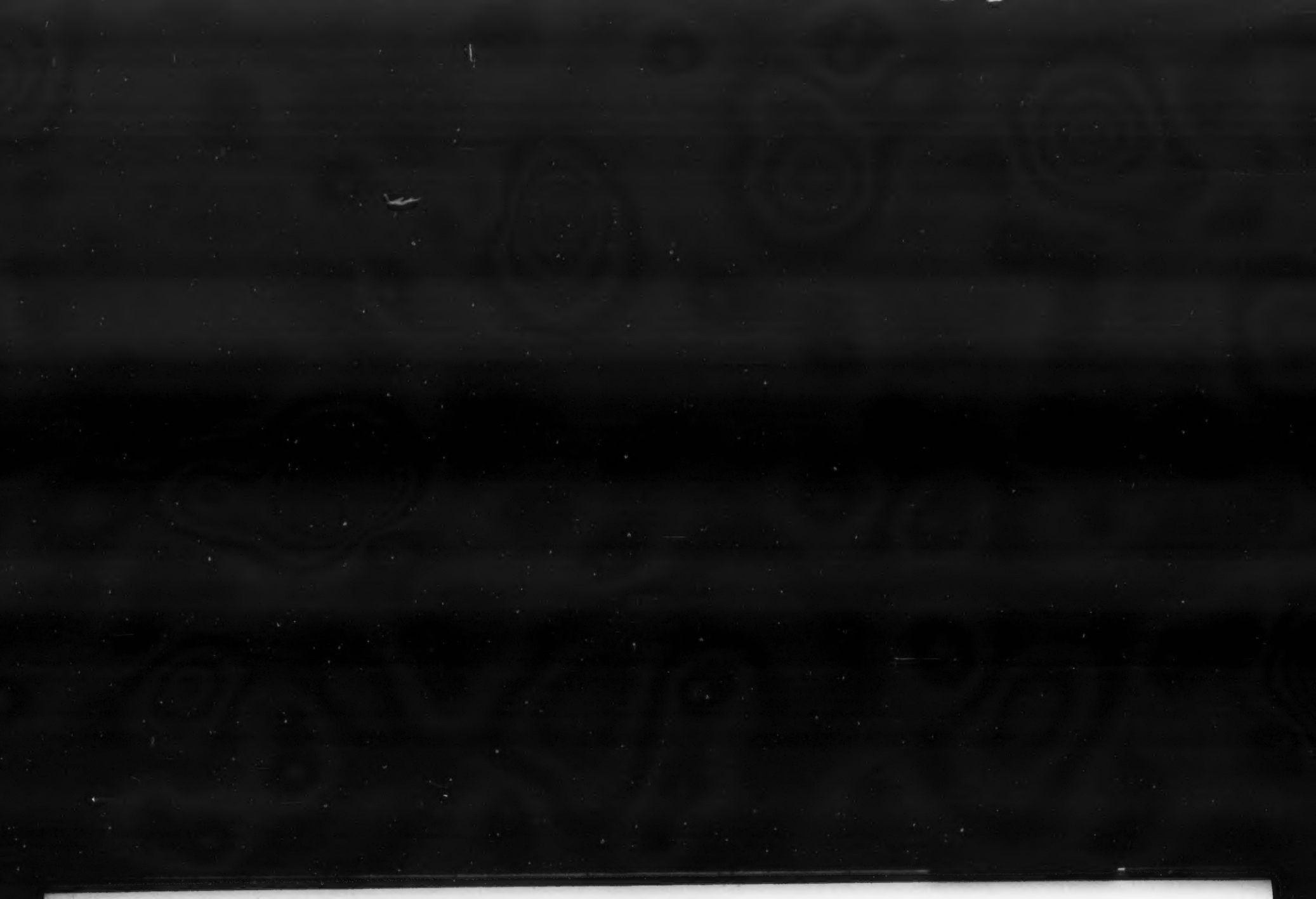
Adjustable arm covered
This covering conceals the screw thread on the arm and improves the appearance of the Closer.

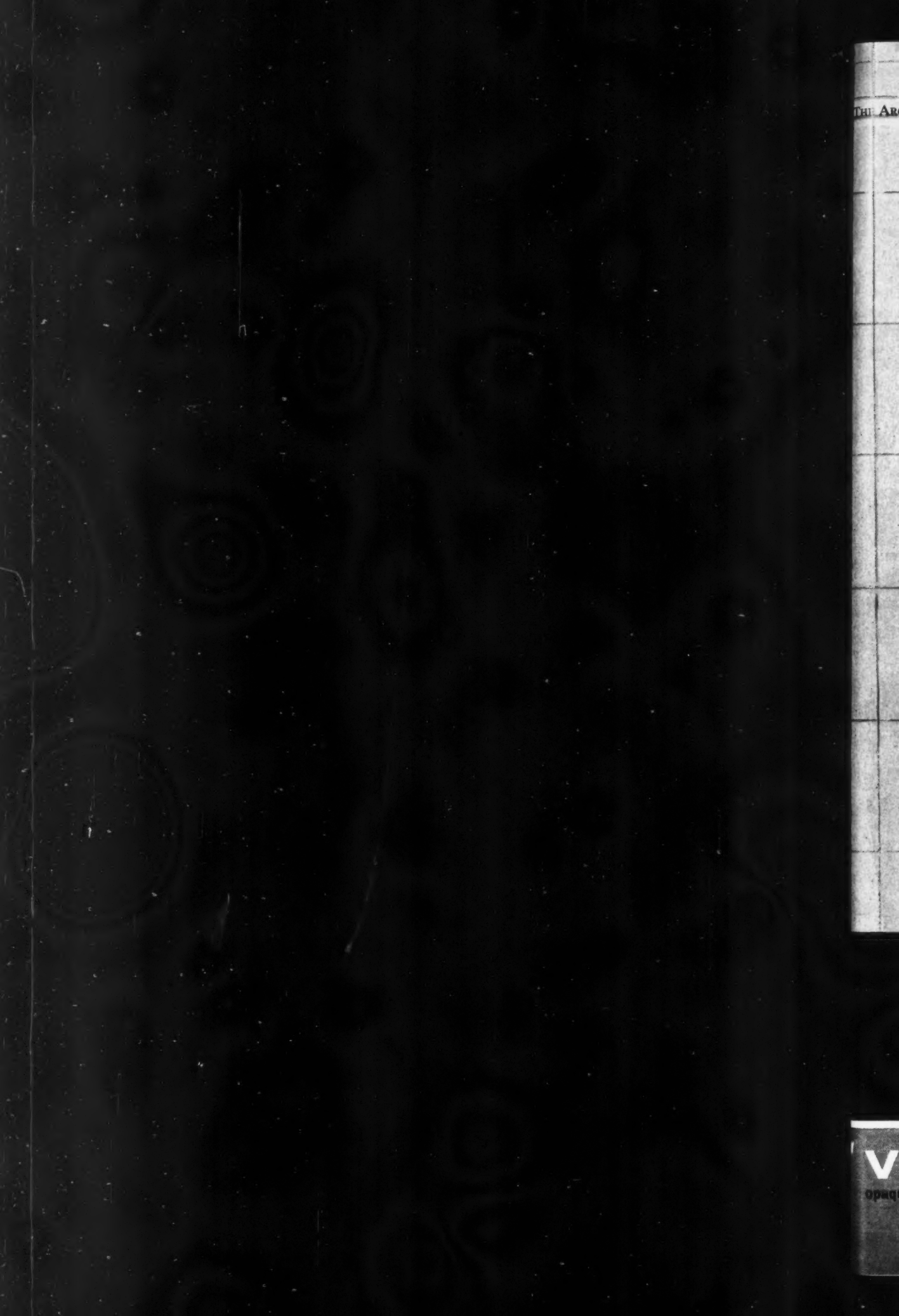
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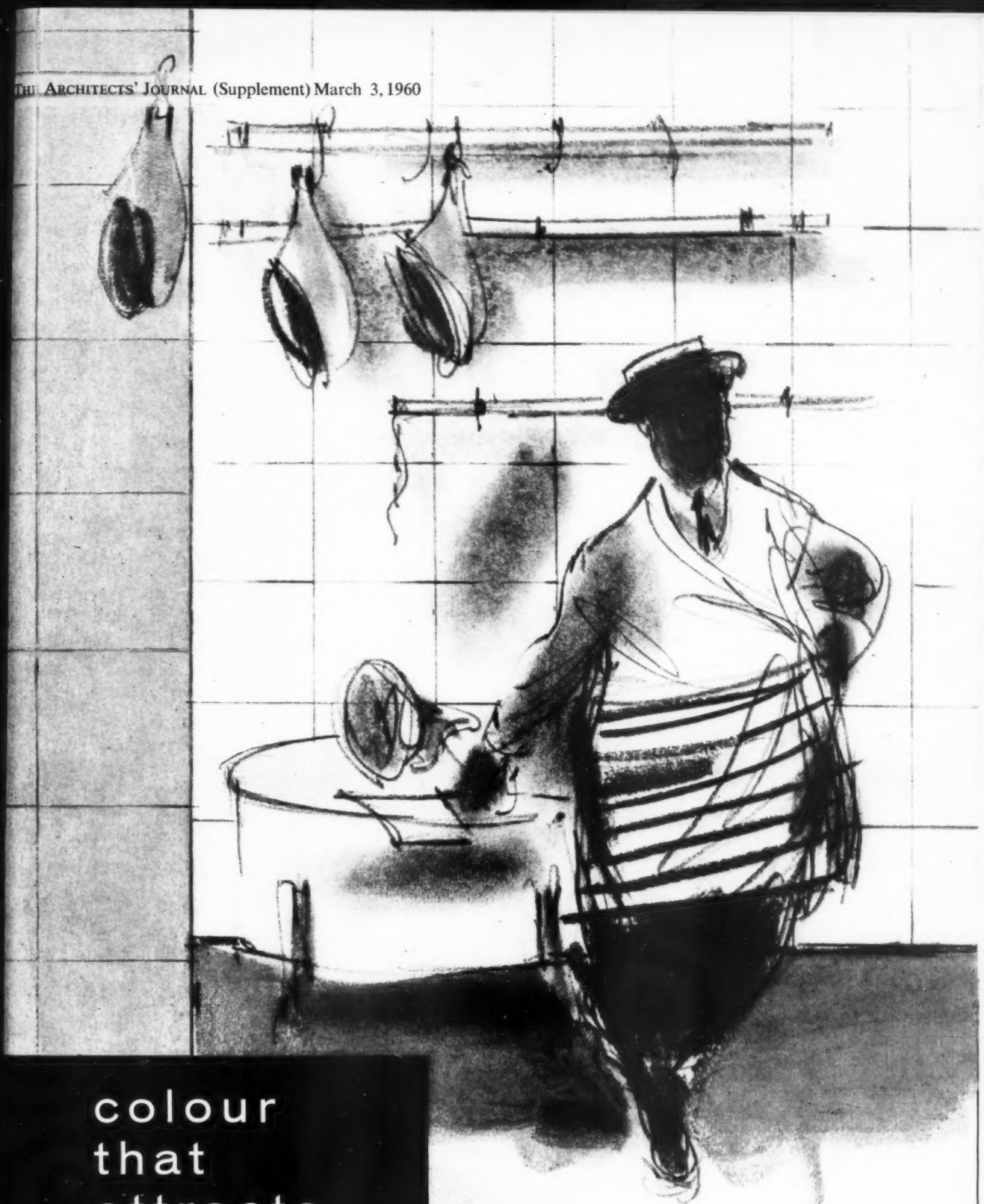
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opaque glass, a permanent colour wall lining

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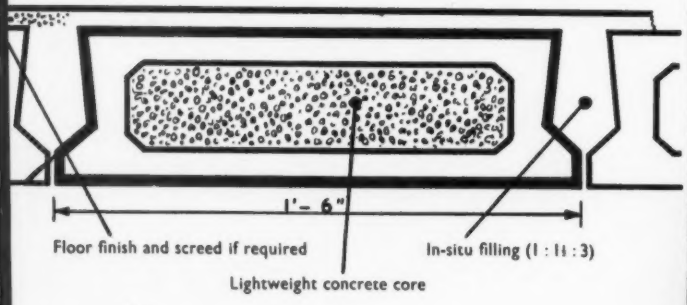
'VITROLITE' *is a registered trade mark of Pilkington Brothers Ltd.*
Supplies are available through the usual trade channels.

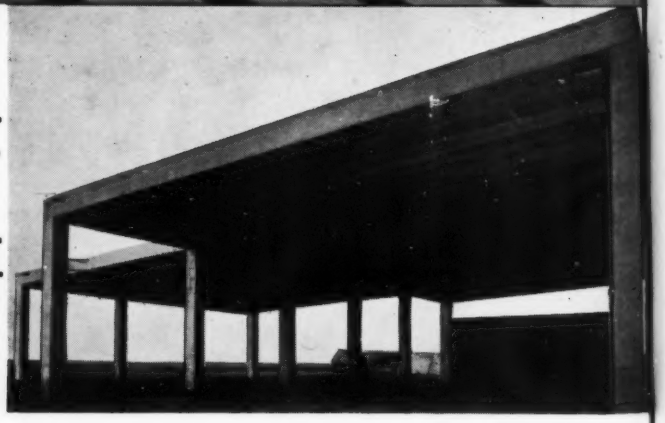


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for every lighting requirement



101 range

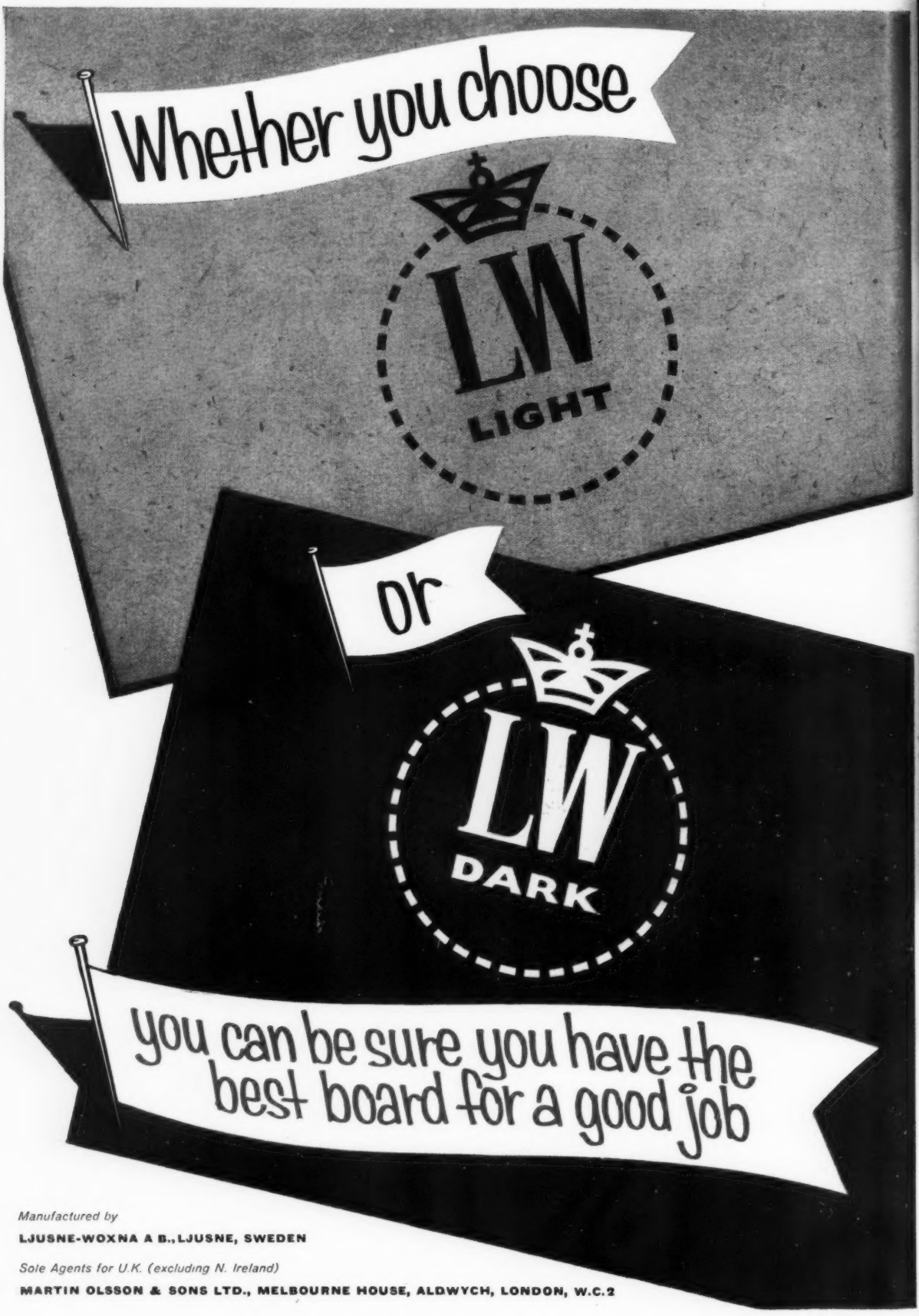
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"MACDEK"

NOW INCLUDES

ROOF DECK UNITS

TO SPAN 14′ 6″

'MACDEK' (Pat. No. 807029) Aluminium Roof, designed by F. McNeill & Co. Ltd., is a complete lightweight insulated roof designed for flat, pitched or vertical construction. It is made up of strong Aluminium alloy deck units with a layer of insulation material sealed to the roof deck and waterproofed with McNeill's Lion "Combinite" Multi-layer bituminous roofing. The deck units are pre-fabricated and manufactured from high grade Aluminium Alloy. Each unit, has an effective width of 2ft. and a maximum span of 14ft. 6ins. from purlin to purlin. All erection is carried out exclusively by McNeill's skilled craftsmen, thereby giving the highest standard of efficiency.

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OFFICIAL!

Lindoco patent factory-hung doorways are highly-efficient fire-barriers which fulfil all Fire-Check requirements as laid down by B.S. 476—1932 and BSS.459, Part III, 1946. Tests by the Department of Scientific and Industrial Research and Fire Offices Committee Joint Research Organisation indicate that the "half-hour type" door also passed for the GRADE "E" fire-resistance.

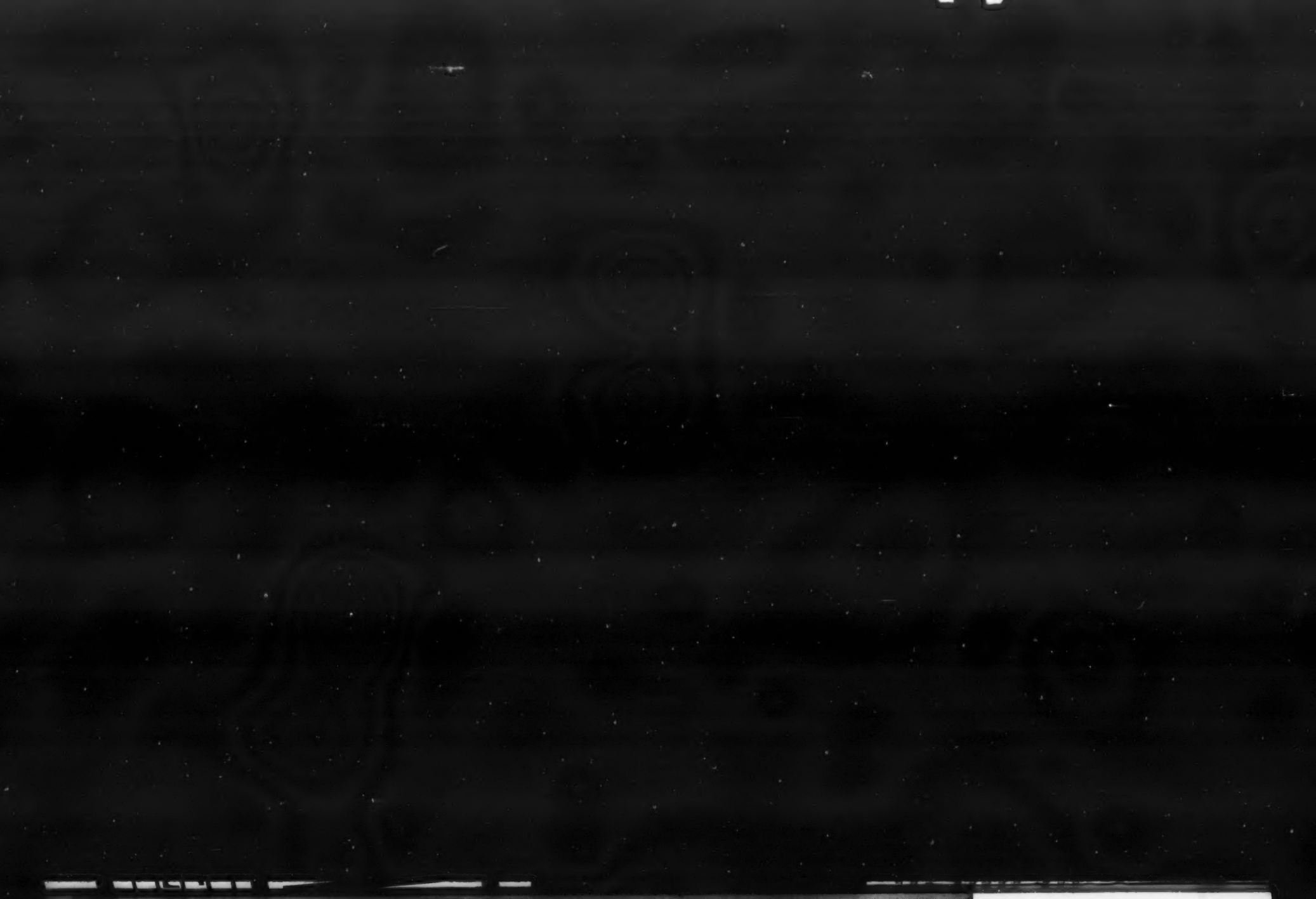
National Physical Laboratory tests show that the Lindoco Fire-Check door, with its core of solid Stramit, provides better insulation against airborne sound than a solid timber door. Official test report forwarded on request.

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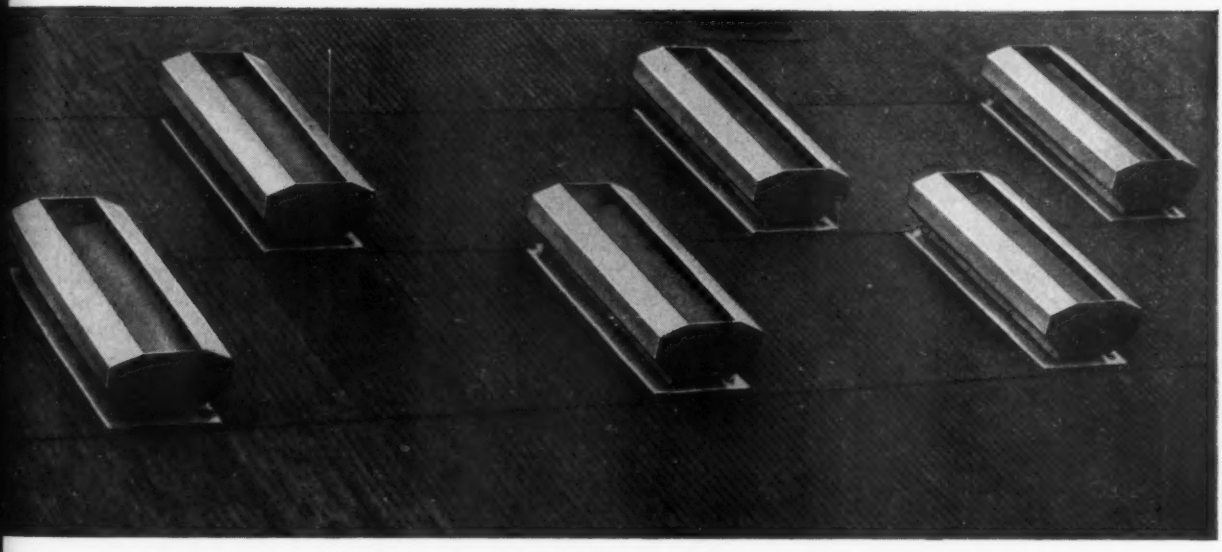
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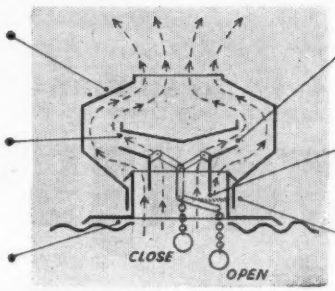
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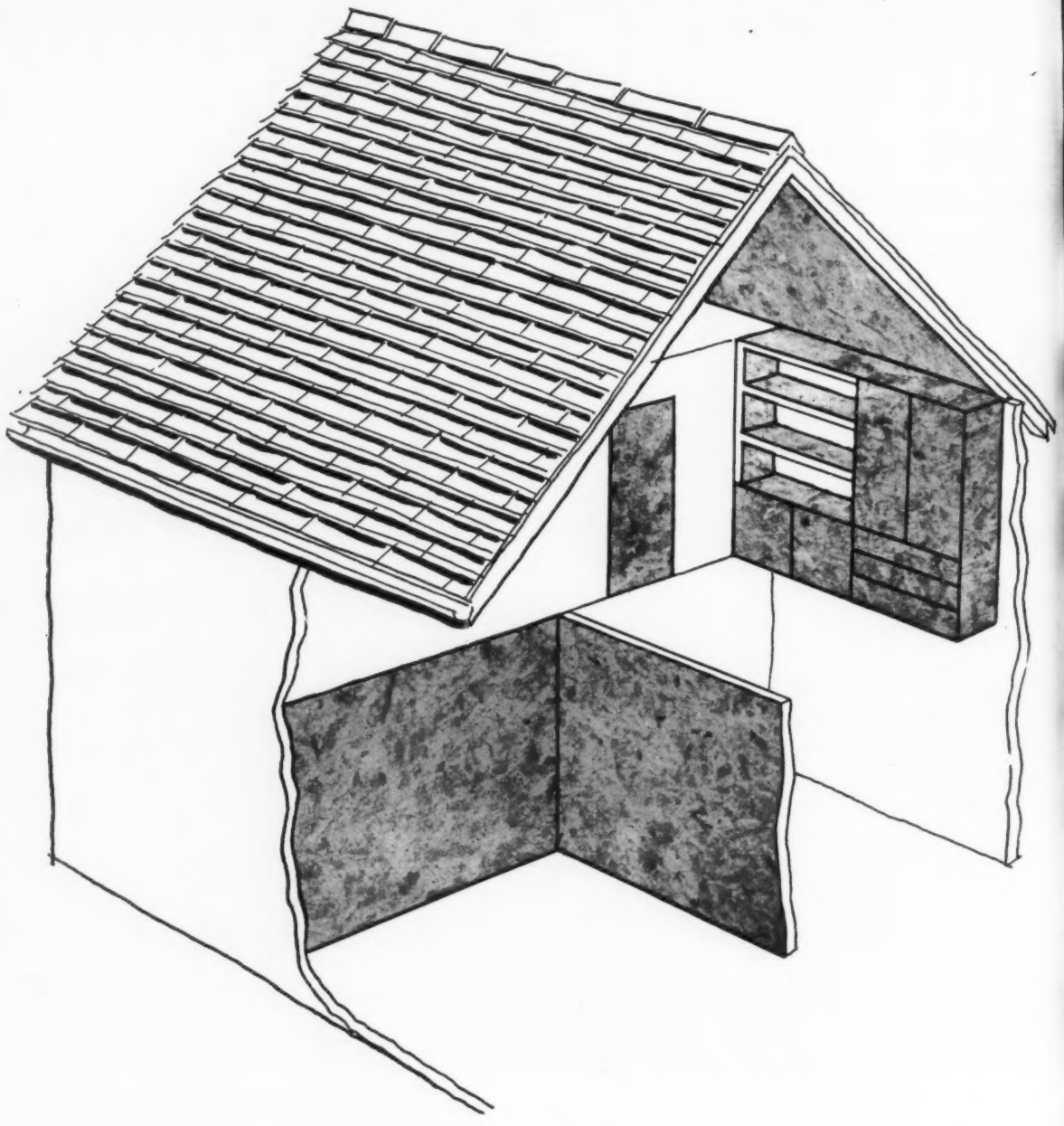
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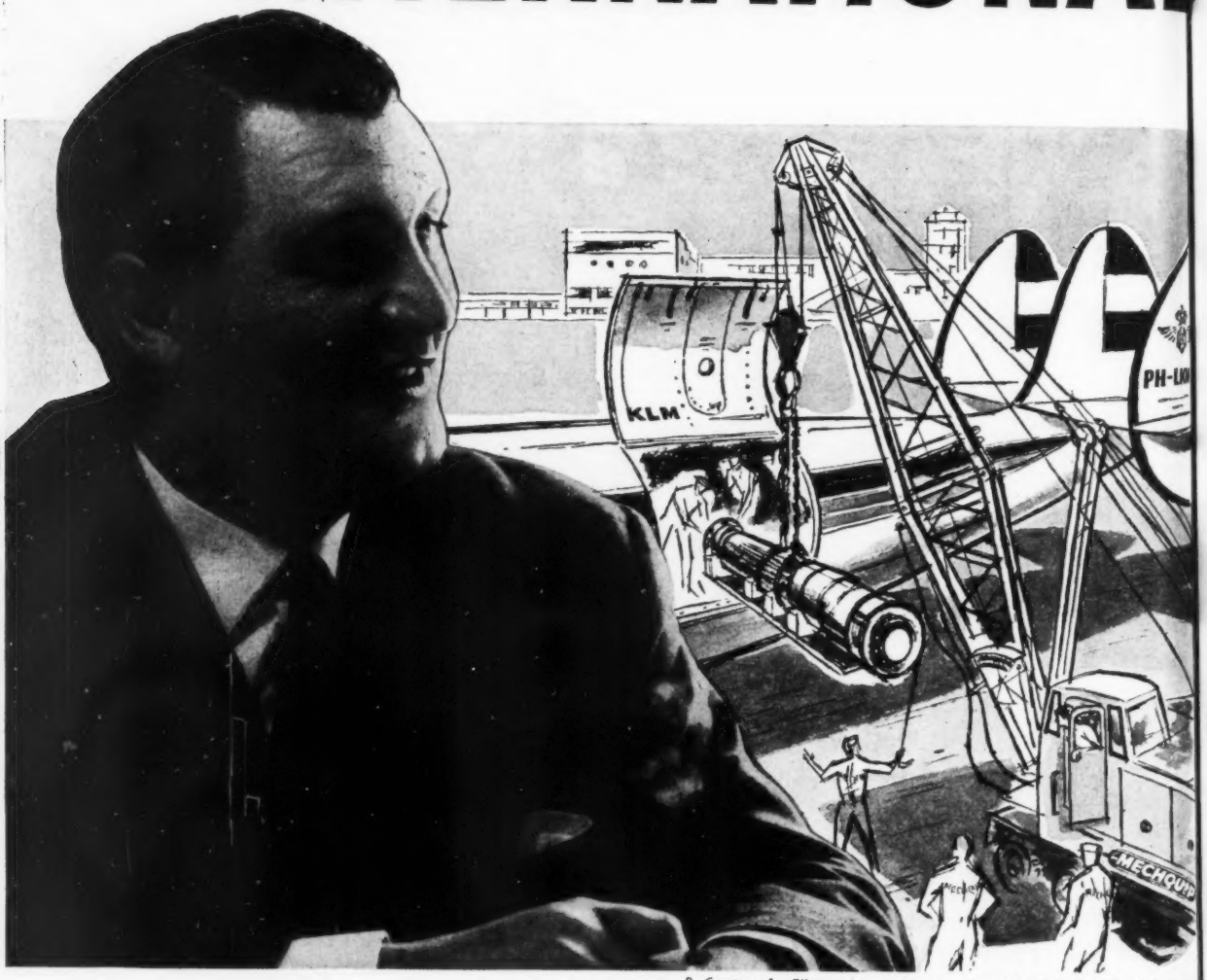
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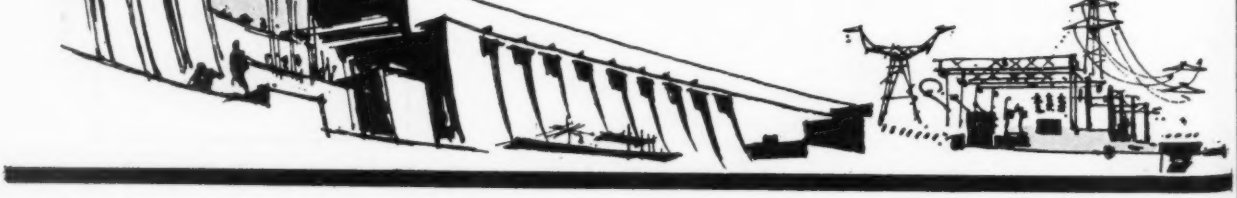
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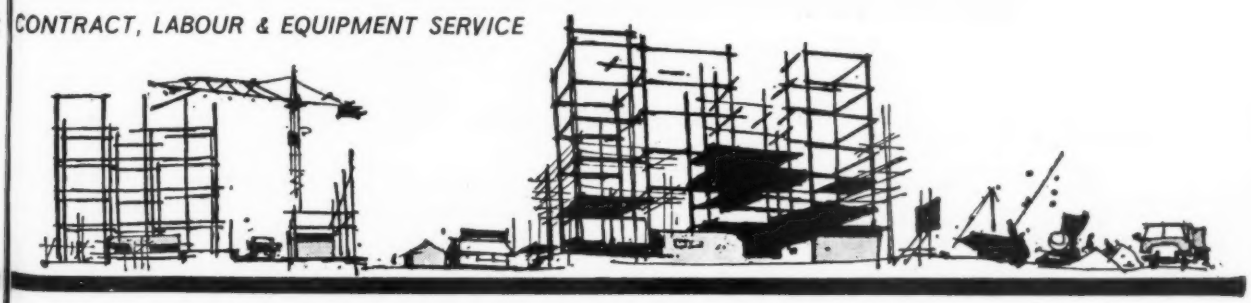
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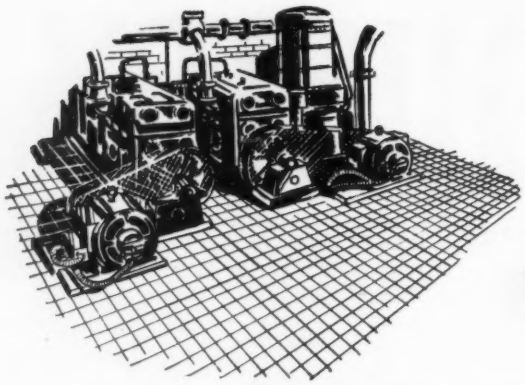
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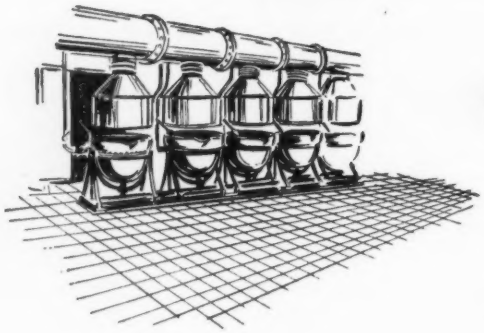
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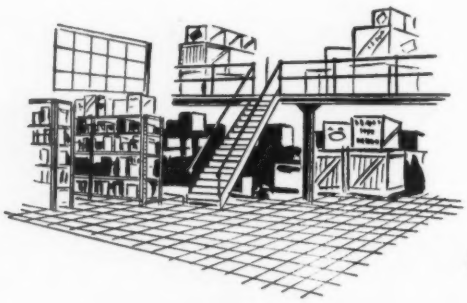
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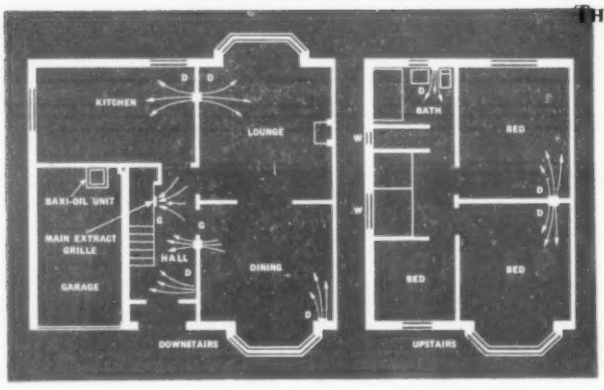
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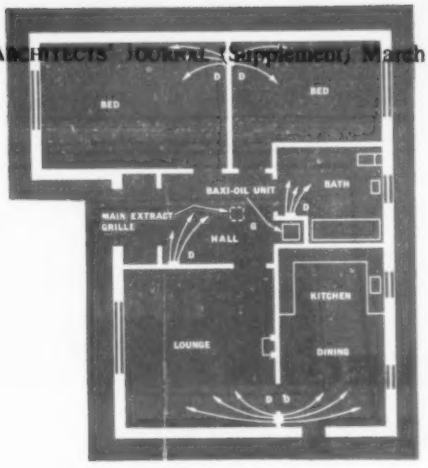
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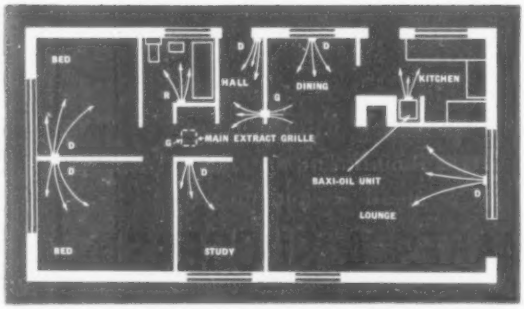
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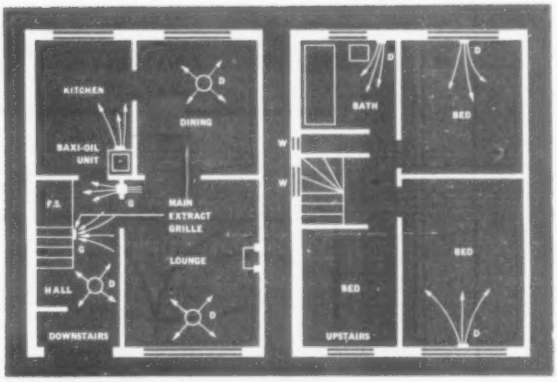
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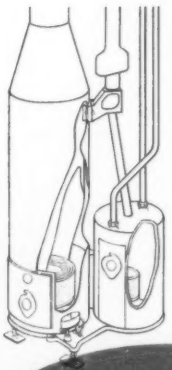
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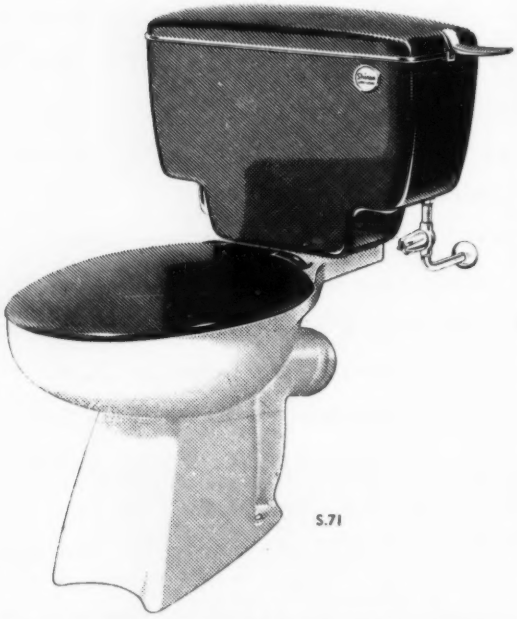
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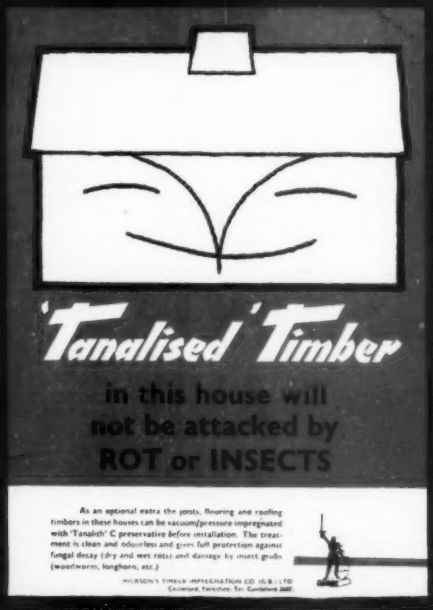
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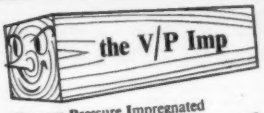
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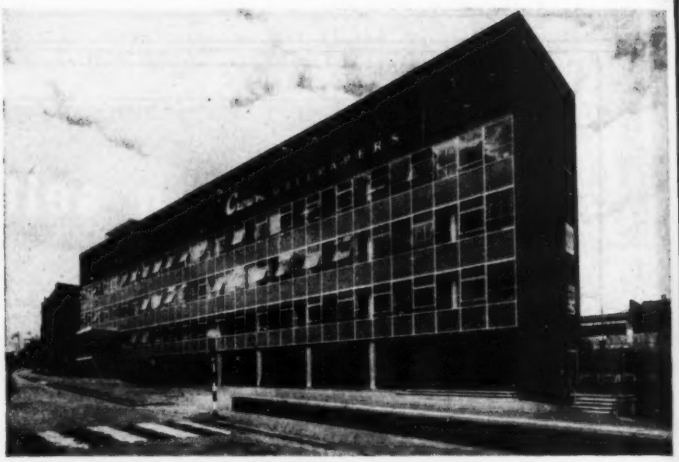
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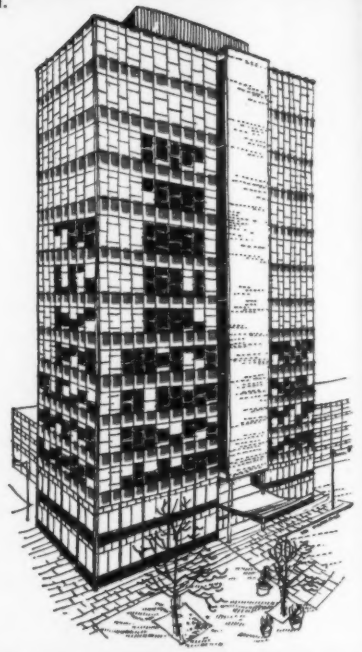
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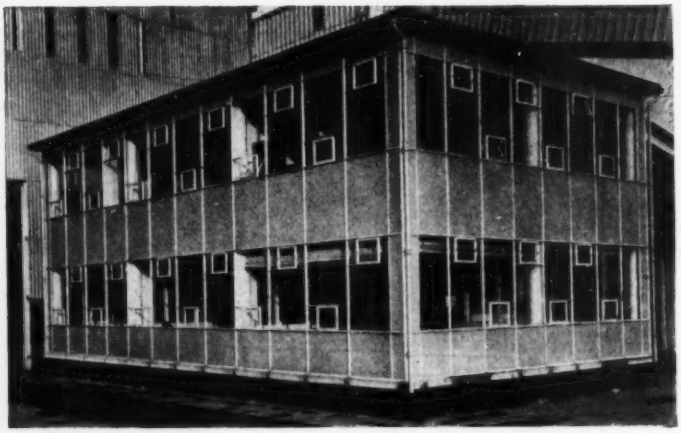
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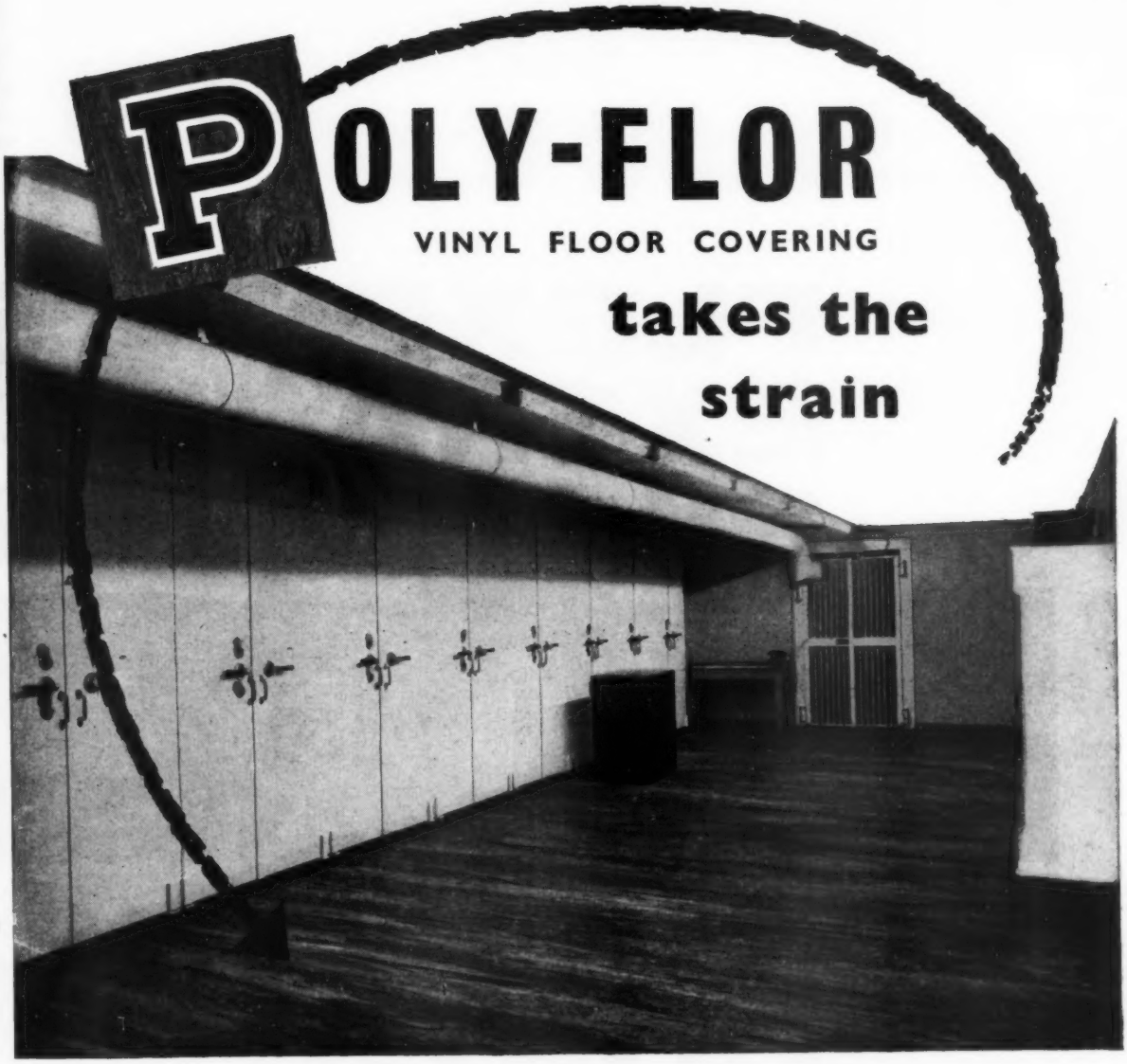
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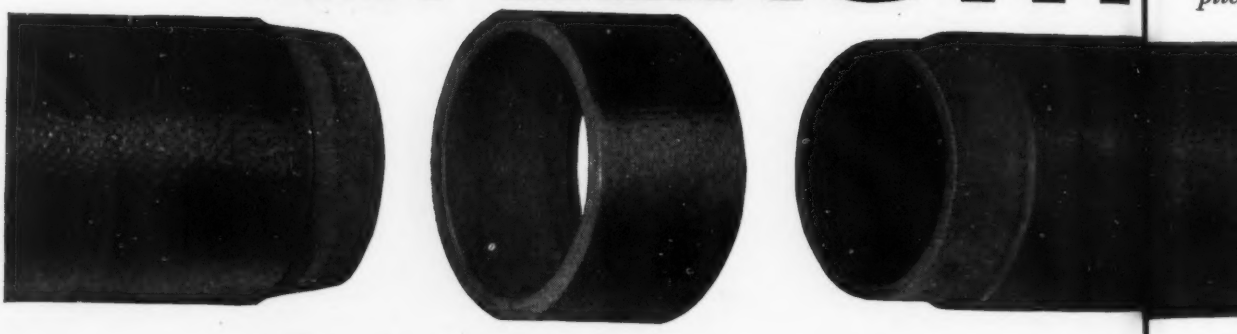


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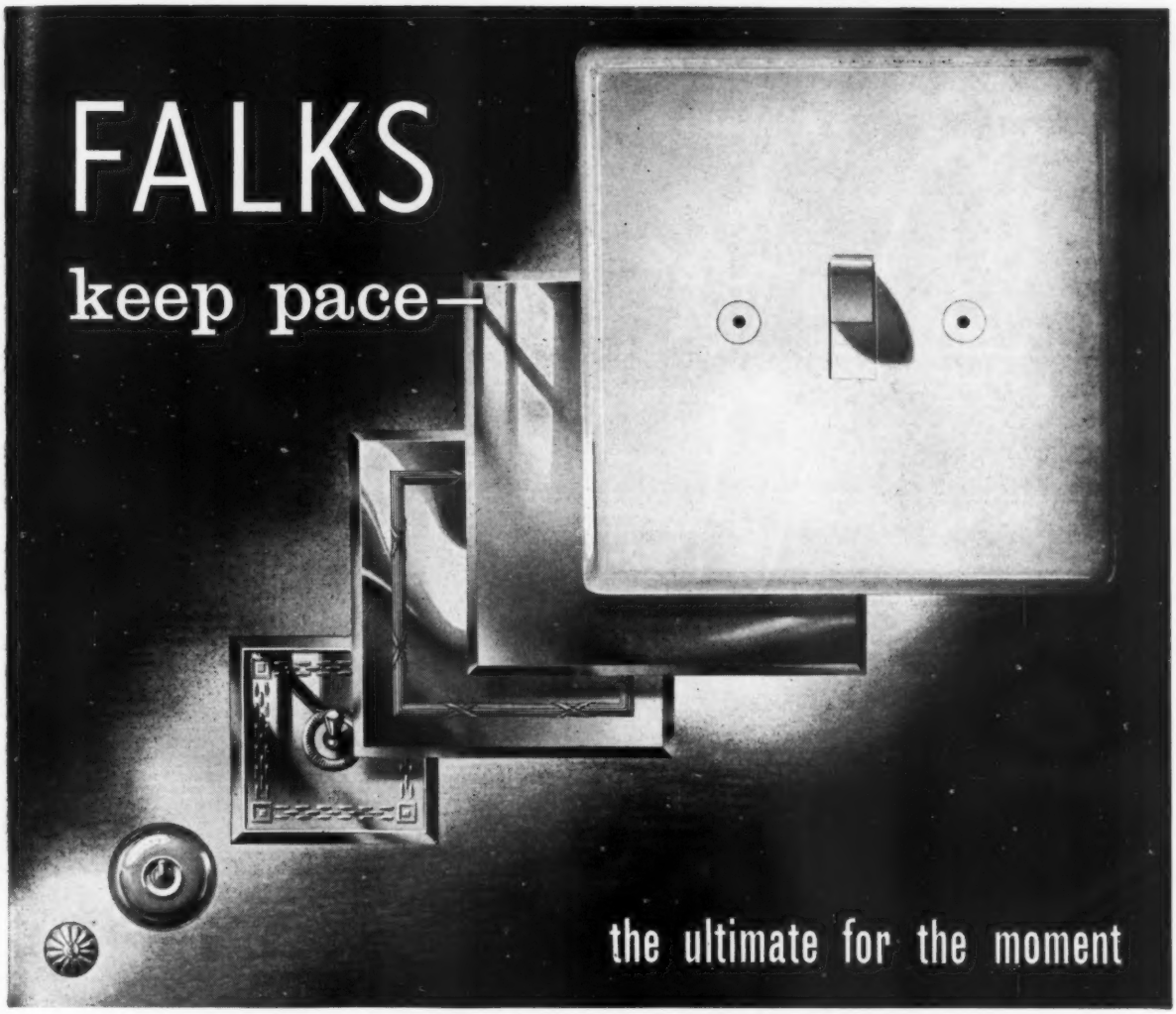
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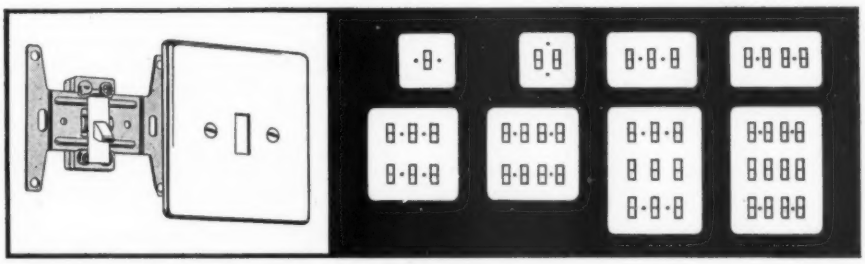
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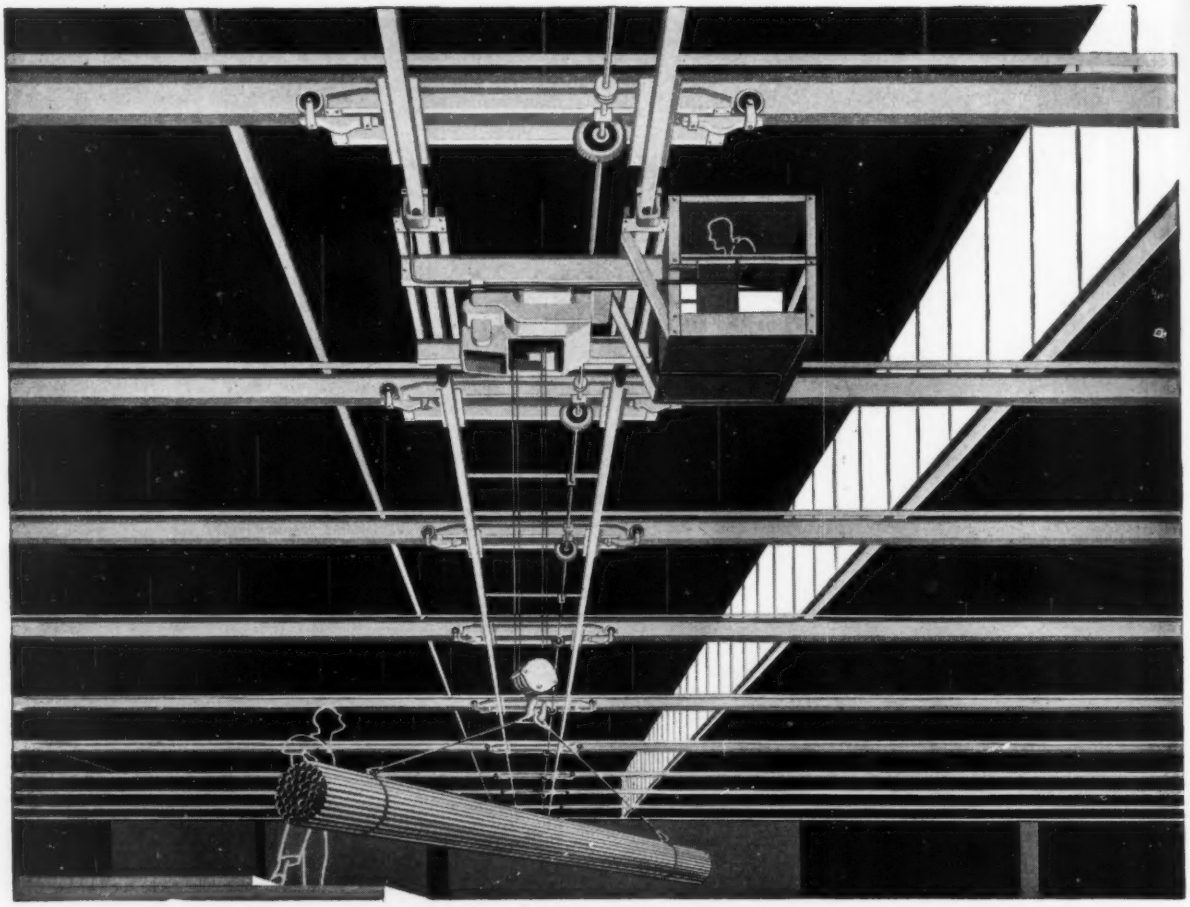
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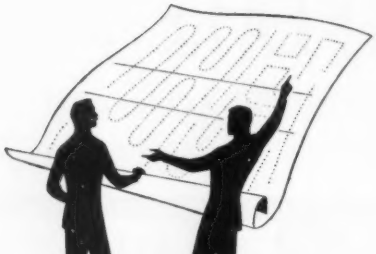
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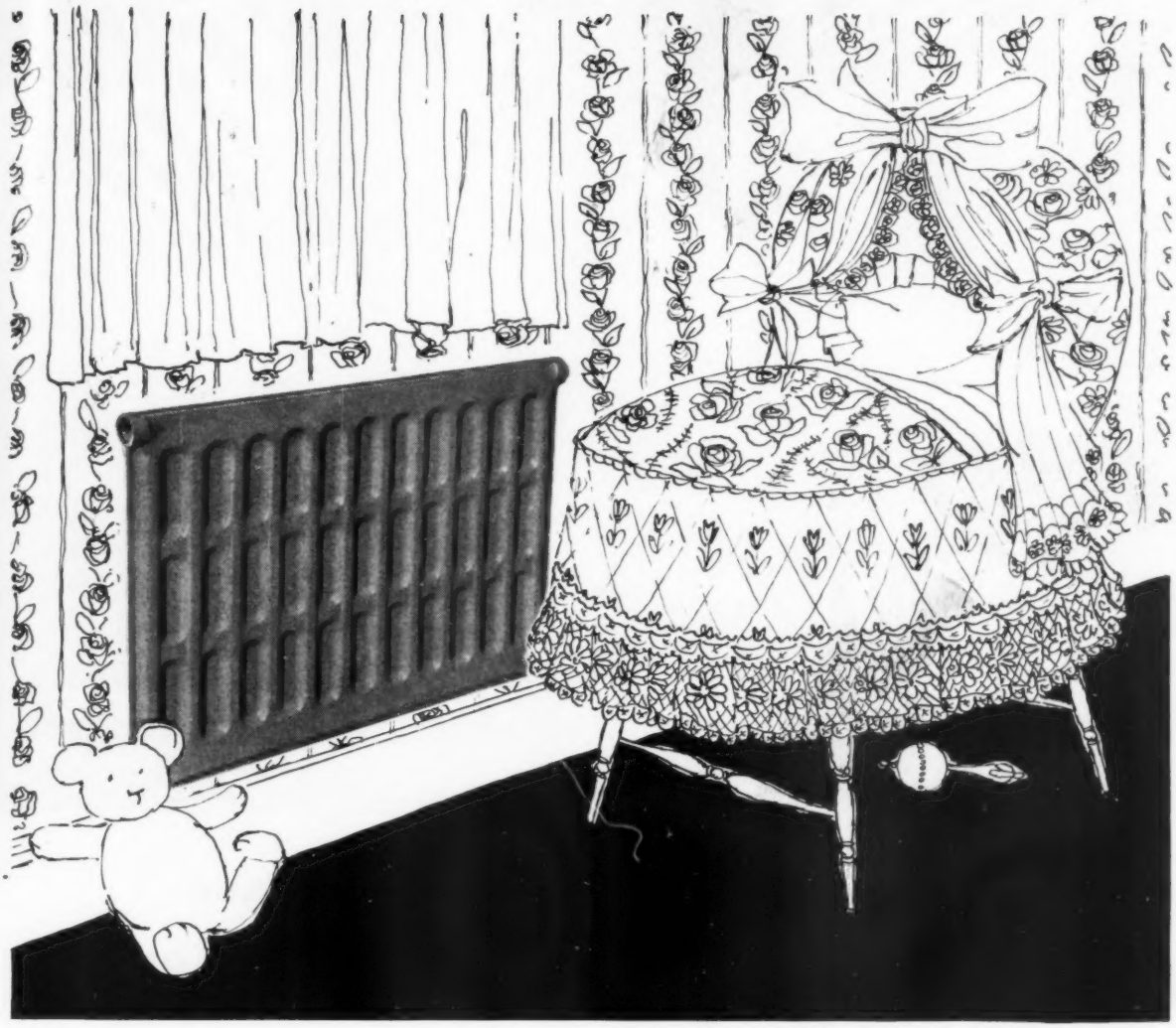
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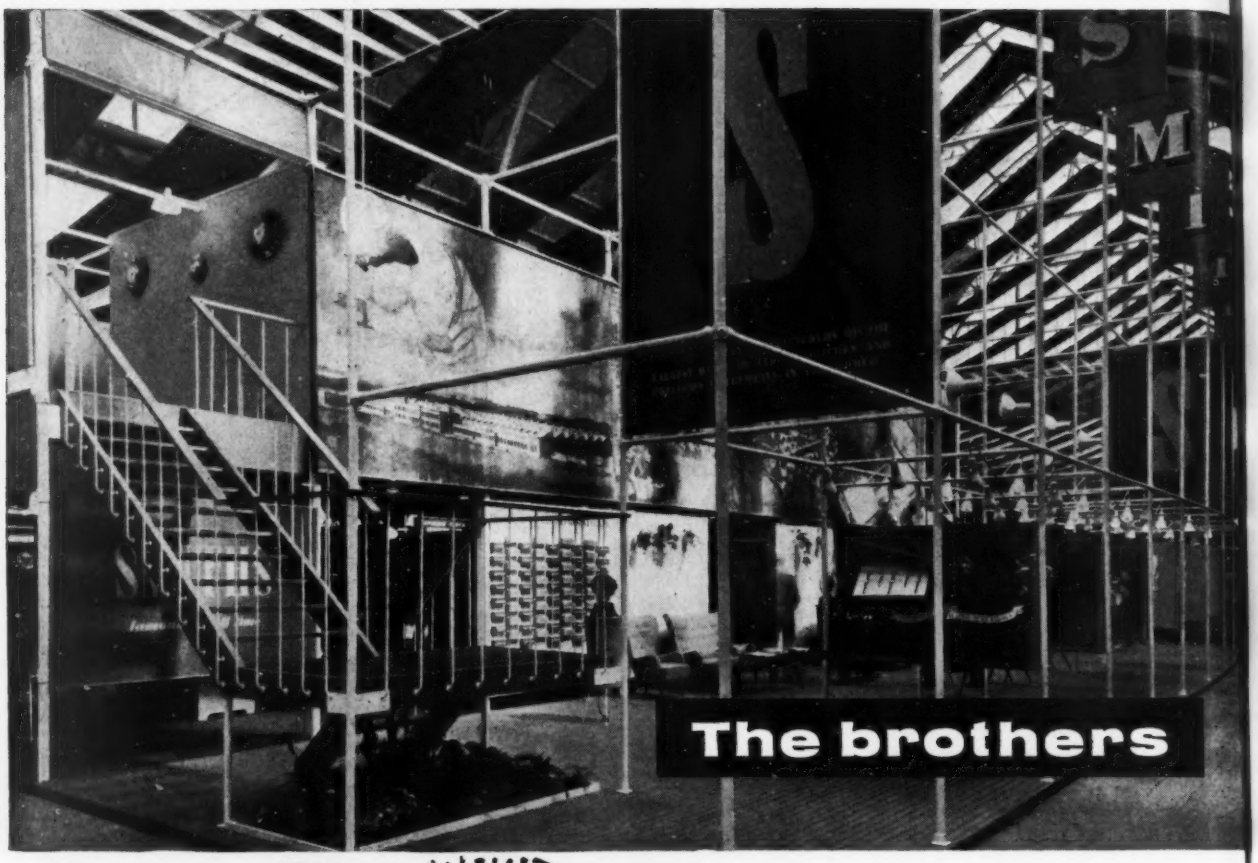
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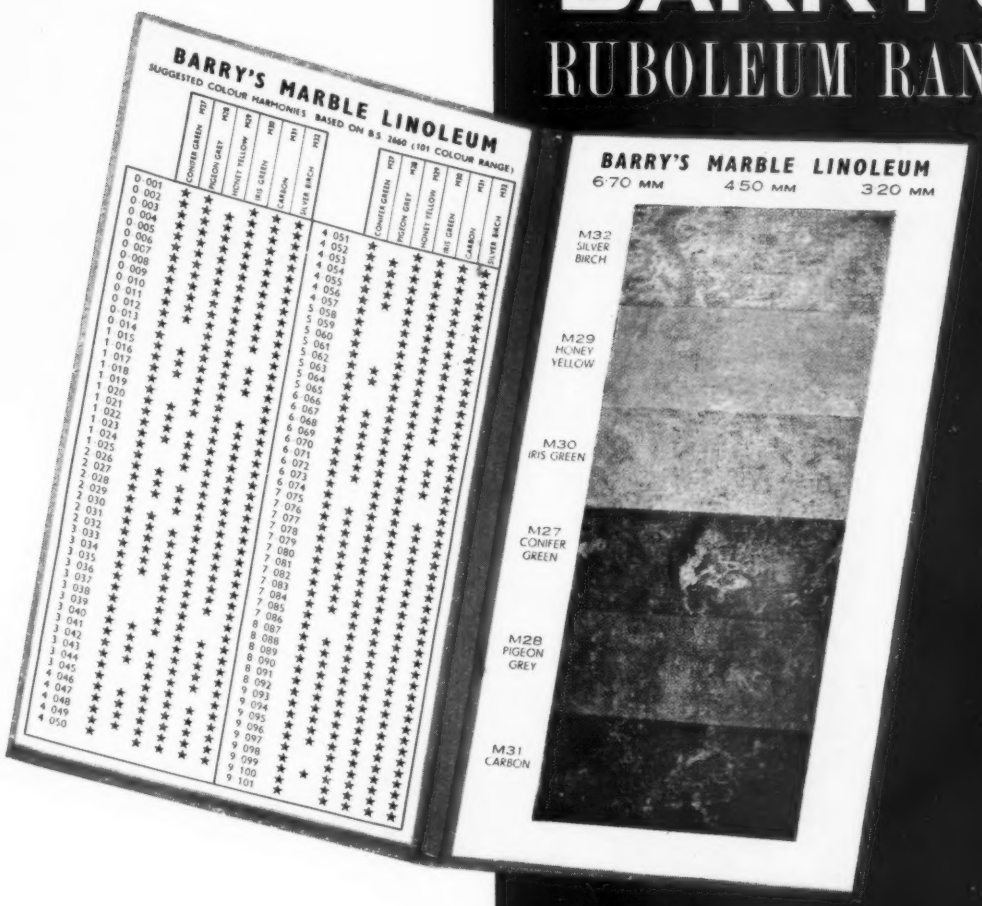
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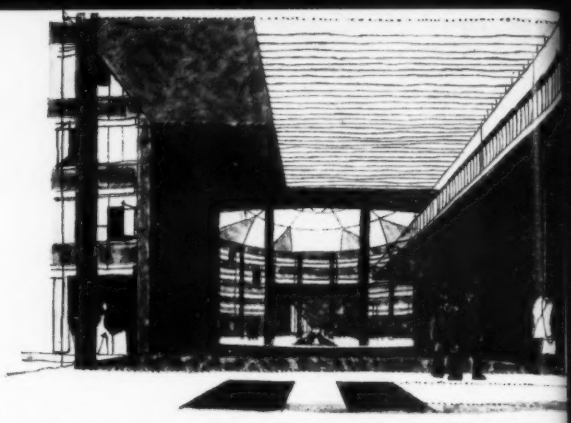
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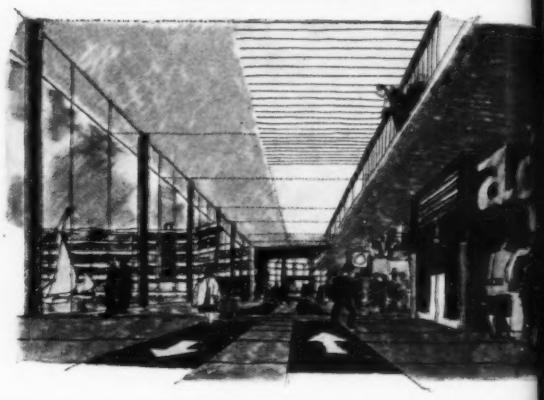
Motopia

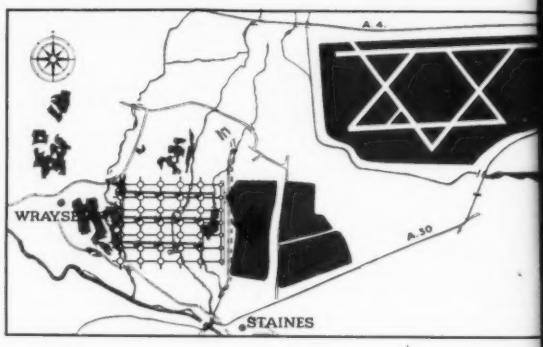
A Glass Age Development Committee Study

4—THE COMMERCIAL CENTRE

A shopping centre of approximately 400,000 square feet on two levels will be a feature of the Town Centre of Motopia, which altogether will allow for shopping and entertainment for 100,000 people, office accommodation for 3,000 and a few light and service industries. There will be covered roof-parking for 3,000 cars in two levels with open roof accommodation for 1500 cars.





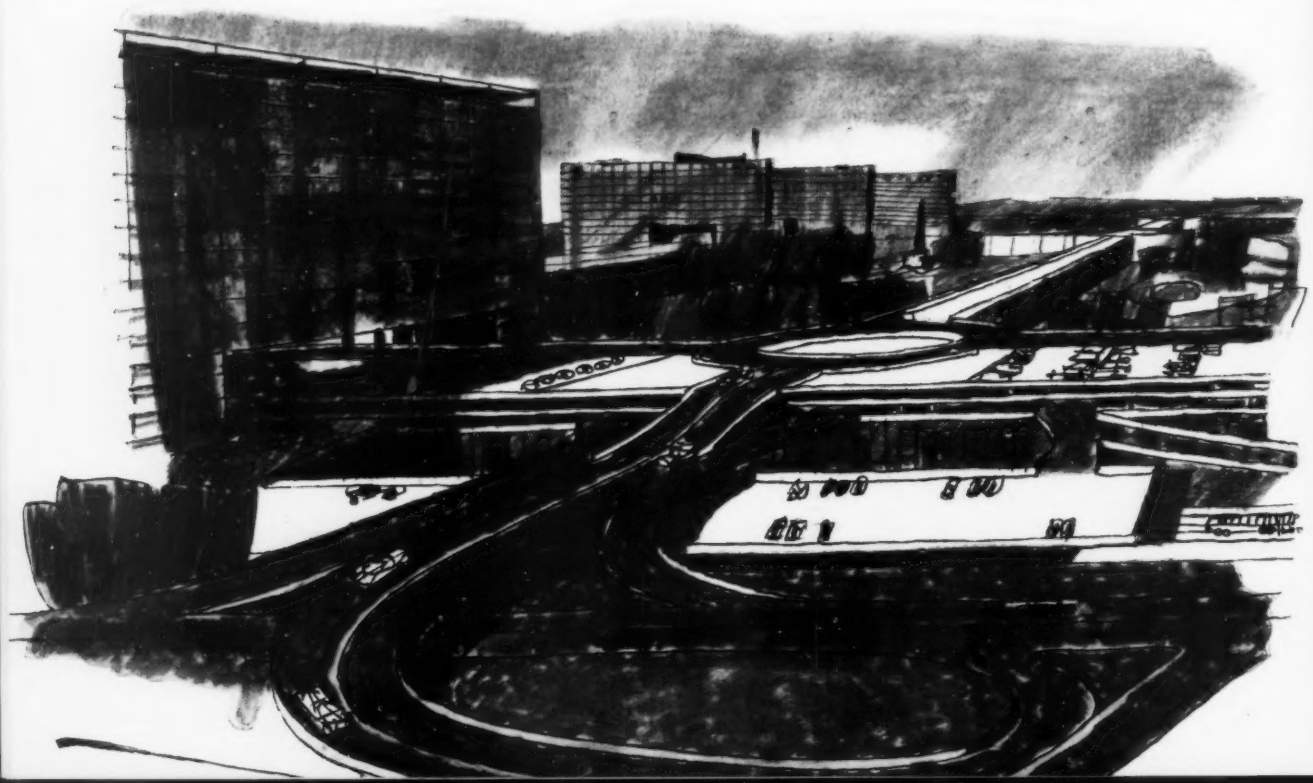


ILLUSTRATIONS SHOW

1 One of the circular halls in the 'Great Stoa'— the two-level shopping arcade, which is linked with the car parks by vertical paternoster lifts.
2 Looking along the shopping arcade, showing the moving pavements for pedestrians.
3 Site plan of Motopia.
4 The access to Motopia from the main road, showing the site of the shopping centre and car parks.
5 The large illustration shows the view from one of the shops.

Motopia is the fourth post-war study prepared by the Glass Age Development Committee, consisting of Jellicoe, Ballantyne and Coleridge, F/A.R.I.B.A., Edward D. Mills, F.R.I.B.A., and Ove Arup and Partners, and convened by Pilkington Brothers Limited.

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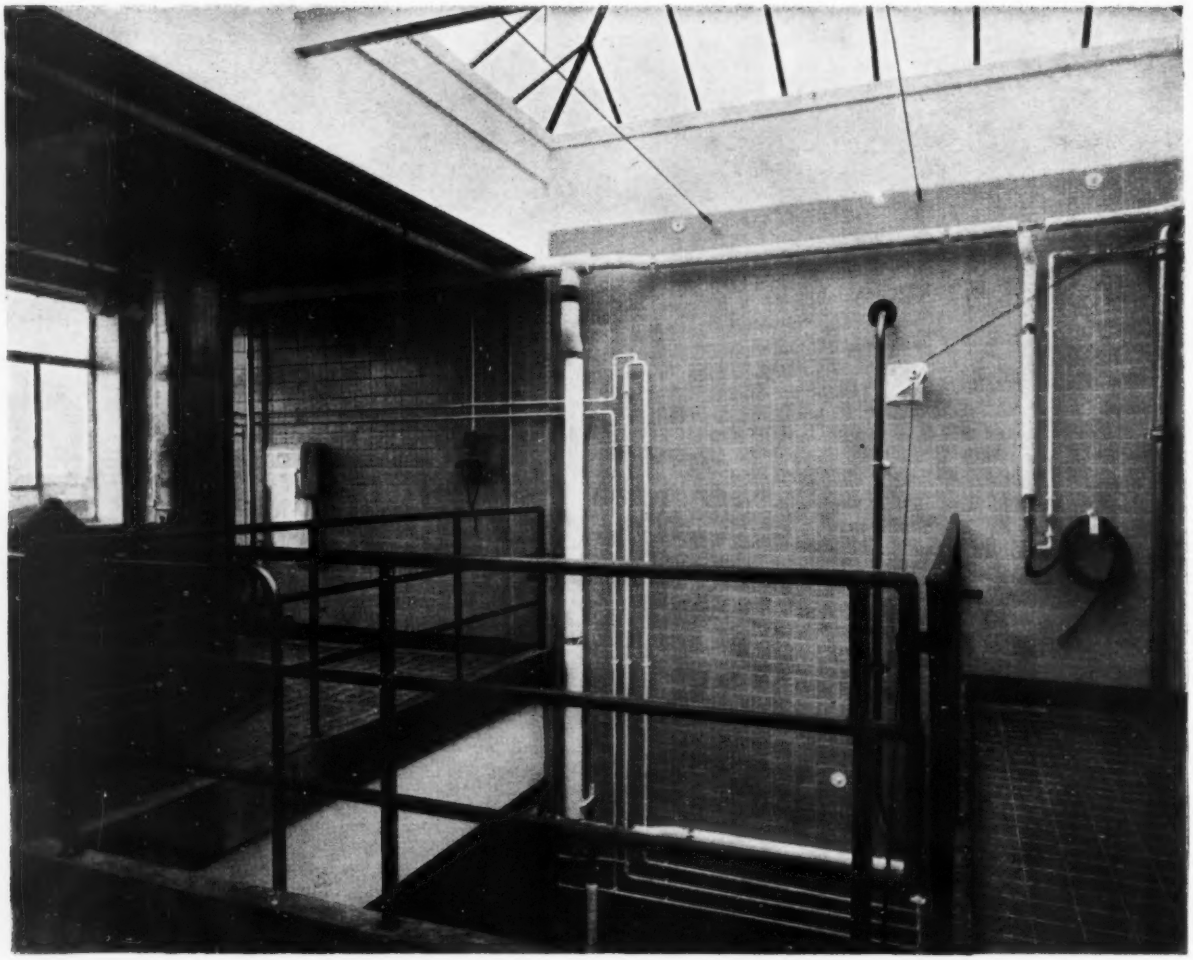




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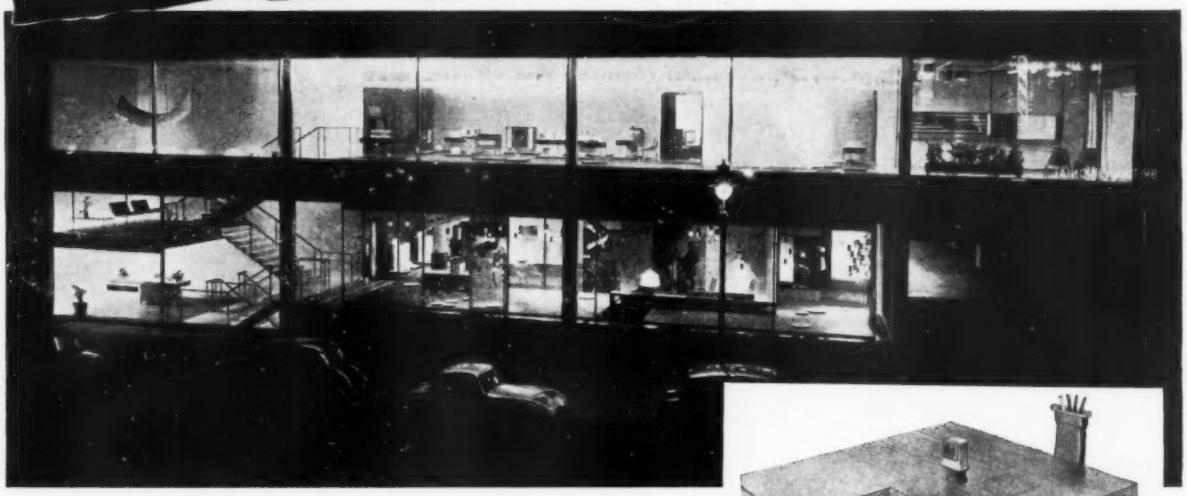
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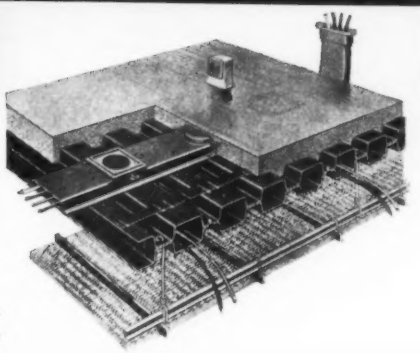
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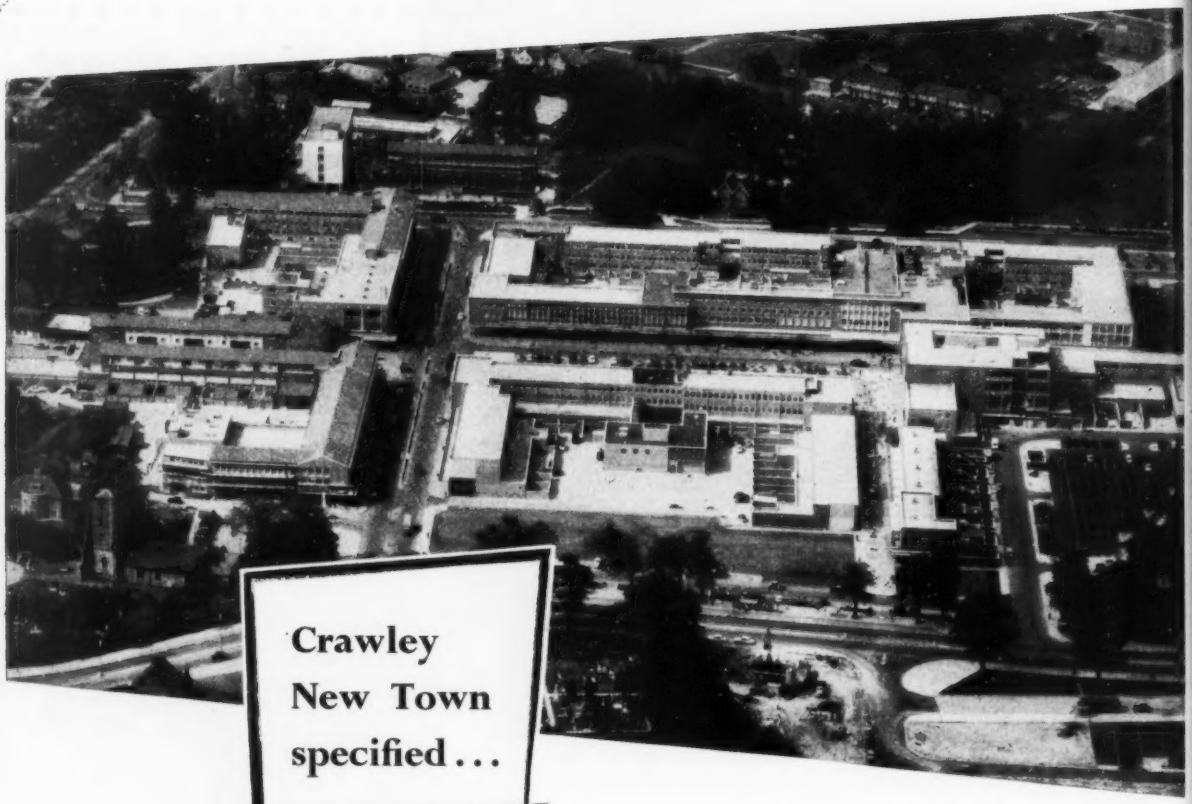
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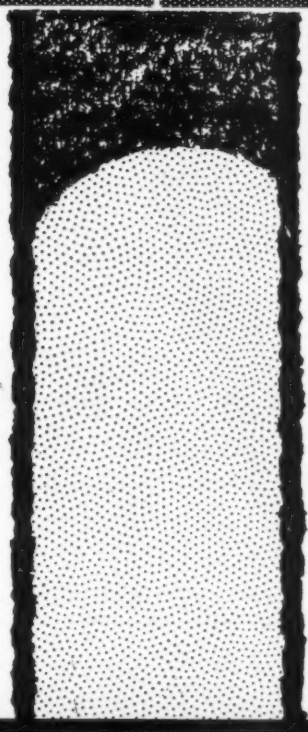
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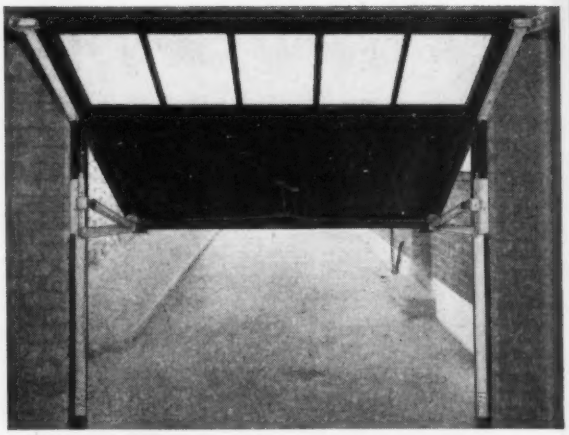
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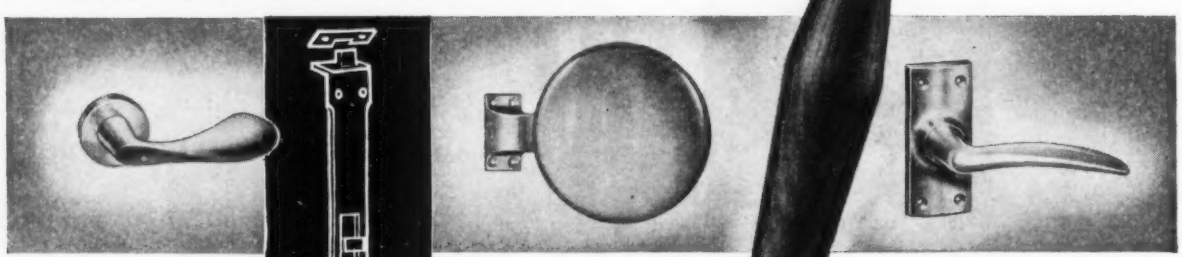
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The Thinker from "The Gate of Hell", Rodin, Bronze, 1879-1900

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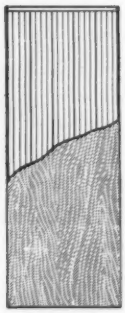
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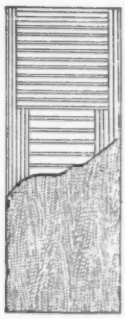
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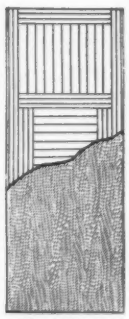
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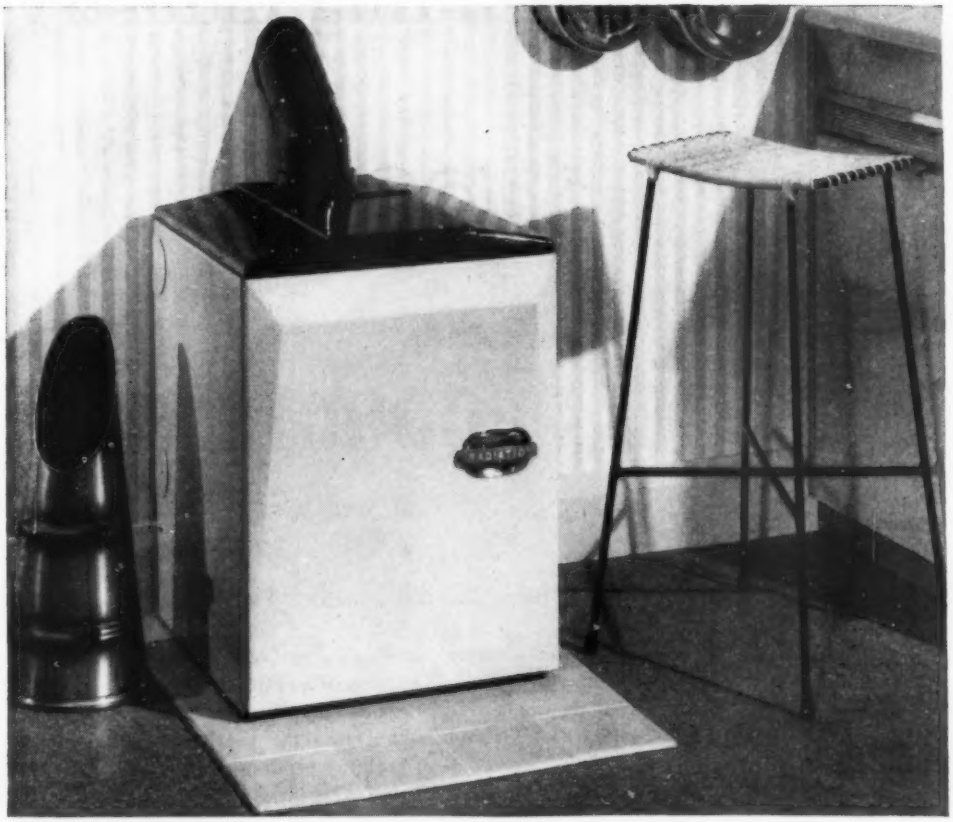
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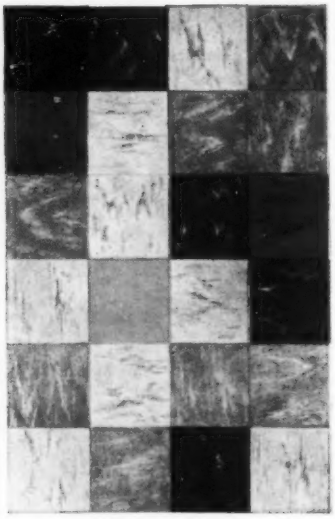
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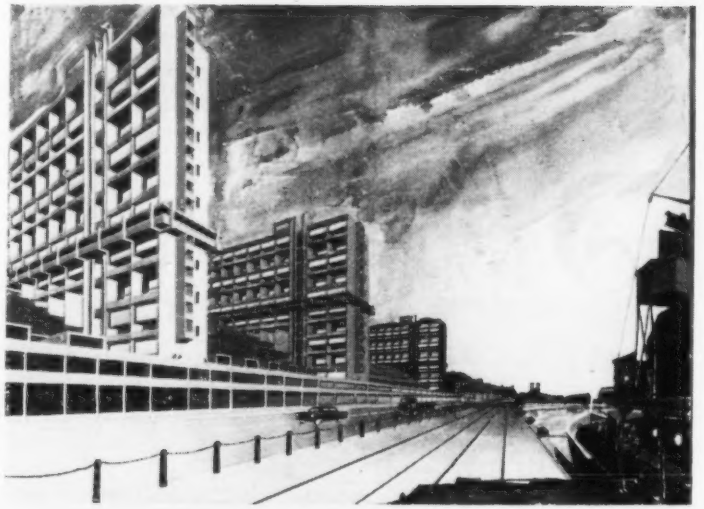
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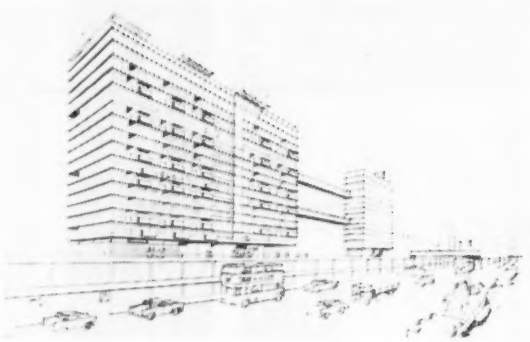
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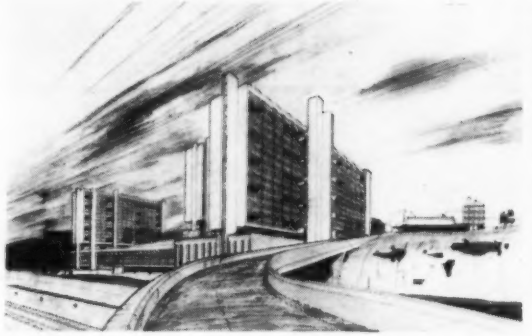
TURKEY—October, 1959

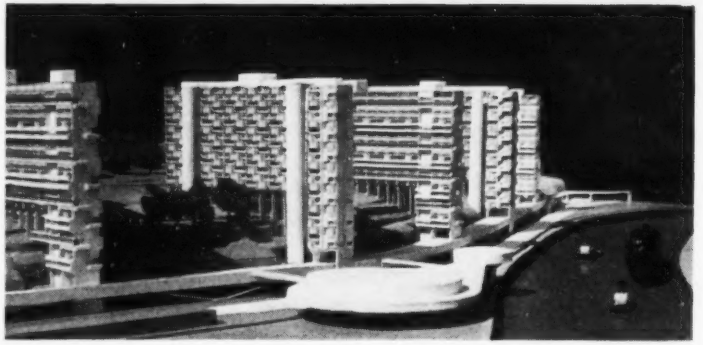
Thursday: We assemble at 10, Herr R from Denmark—a tiny tortoise in an ankle-length ulster, Professor E—one of Turkey's best-known architects—dressed *a l'Anglais*, like Osbert Sitwell in countenance, brisk, faultless English: Professor I another Turk, dark, prune-eyed, shoulder shrugging. Dean P (from Philadelphia) is our chairman, articulate and business-like, Mr. G—also American—our quiet secretary. In attendance are various consultants. We meet in the new House of Parliament Building—a Nordic-looking stripped-classic structure of considerable dignity, wearing the unmistakeably non-committal livery of a competition winner. Outside is a brilliant Anatolian day . . . snow-dusted multi-coloured mountains, diamond-bright air, clear blue sky. Inside the hall, and beneath the crystal chandeliers are spread out some sixty schemes—none at first glance disgraceful, a few spritely, the majority rule-of-thumb magazine architecture. They come, we are to learn later, from all over the world—some of them from Japan. The day passes in review. The technique agreed is simple—any scheme that can boast one juror's vote survives until the next round. By lunch the number is down to 20, by 6 p.m. to 8, the probable winner already in the lead. By now we are exhausted—all day we have been on our feet—and plead for release. Black-tied, we leave for dinner at the Italian Embassy. We are shown Visconti's *Sensuality*. The story, obviously of no interest to the director compared to the problems of picture-making, drags but the pictures of Venice at the time of the Risorgimento catch the breath with their beauty. Bed at midnight.











High-Density Hotwells

The Royal West of England Academy School of Architecture is, like the AA School, an independent school, and accordingly forthright in its comments on local planning affairs. The fourth-year student designs, above, are attempts to redevelop Hotwell Road, Bristol, between Holy Trinity Church and Jacob's Wells Road with multi-storey housing at between 120 and 150 persons per acre and with garages for 80 per cent. The 1 in 3 sloping site is shown in its present state, top left. When redesigned no trace of the past remains in the students' perspectives; no attempt would seem to have been made to recapture the intimacy of harbour and housing, and the mass of new buildings placed in a gaunt landscape might well be criticized on that score. The Bristol school undertook these imaginative designs at the request of Bristol's Civic Society, which in January, 1959, told the City corporation that this area was an eyesore. The corporation was asked to consider the possibilities of the comprehensive redevelopment of this area, which is one of the main approaches to the City centre. The Planning and Public Works Committee was sympathetic but for various reasons no action was taken. The Civic Society felt that further interest in ridding Bristol of this eyesore might be stimulated if some more definite proposals could be put forward. Accordingly, it invited the R.W.A. School of Architecture to co-operate by setting the problem to its students as one of their design projects and offered prizes for the best schemes. The schemes are on view at the Bristol Building Centre until the end of the week. The designs shown above are by Peter Floyd (top right, second prize); R. J. Tucker and R. F. Wood (above left, commended); Gillian Amsdon (centre, above, first prize); J. F. Hannam and J. L. N. Pegrum (above right, commended).

Friday: Next morning—to refresh our memories and in fairness to all, we start by slowly reviewing every entry. We inspect in a group and also as individuals. No corpses are revived by this process, but a few are given flowers for their grave by being noted in the report for some quality or skill. By lunch time the winner—an Asplundish, wandering solution—has been unanimously chosen, though some of us perhaps had hoped for something stronger for this mountain site. (This we had all previously visited—a splendid wild hill-top overlooking the city. No trees, but a few tortoises cynically assessing their chances of undisturbed tenancy.) The "tougher" boys are so vulgar or insensitive that we can none of us bring ourselves to vote for them. We are now down to 12 (for 3 prizes and 5 mentions) and it's still—within this range—anybody's race. After lunch at the hotel we return to the argument. By now the candidates have been given names—"Old Persia," "Hit and Miss," "Umbrellas," etc.—and each has his supporter or detractor. Favourites for a day begin unaccountably to drop out. Outsiders rush suddenly to the front in a spurt fostered sometimes by fatigue with old favourites or a slowly maturing affection for a hidden talent concealed beneath hitherto insupportable provincialism. Some hold their place, others disappear as quickly as they had appeared. (Moral. All competitions should be judged over a series of days). By 4 p.m. it is clear we shall not come to a final decision.

*

At 5 p.m. Herr R makes a conscience-driven plea for a long-buried corpse. The elevations, it is true, show possibilities, but the plan—a hive of unlighted classrooms and breezeways more suited to Arabia than an Anatolian hill-top is to Professor I quite unacceptable. We agree to prop the corpse up until tomorrow. The number now stands at 10, with Asplund and "Umbrellas" still in the lead. "Old Persia," for long a stayer, is dropped in sudden revulsion from its mannerisms. By now we know each other better. Herr R conceals behind Picwickian gold spectacles and a Tiggy-winkle countenance a will of granite and great perceptive judgment. "Better a scheme full of faults but strongly conceived by an architect," he says, "than one that has no faults but no spirit—however clumsy—behind it." Strongly in accord with this view is Professor E, sharp-minded and itching to provide his own solution (with which he ceaselessly doodles in his notebook). Professor I, handicapped by complete lack of English, turns his thumb up and down, accepting victory and defeat with a shrug and an upward-rolling eye. Dean P, brisk and voluble, keeps us moving, while Secretary G quietly checks the favourites to make sure the rules are kept. (Nobody it seems keeps *every* rule but we are agreed that as long as the missing accommodation can be provided without mutilating the architect's conception, errors of 10 per cent to 20 per cent will be accepted.) At 5 p.m. we break off for a symposium on Civic Design . . .

HUGH CASSON

To be concluded

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* To preserve freedom of criticism these editors, as leaders in their respective fields, remain anonymous.

The Editors

HOW BIG IS A LARGE NUMBER?

THE paper on "Cities—Living With the Motor Vehicle," given recently by Christopher Brunner, is evidence of a welcome development in the policy of the British Road Federation, of which he is a vice-President. For Mr. Brunner recognized that the building of roads and parking facilities for motor vehicles must be an integral part of a programme of systematic urban renewal, to which he could see no alternative if the cities were not to be forced into a decline by the strangulation of their traffic.

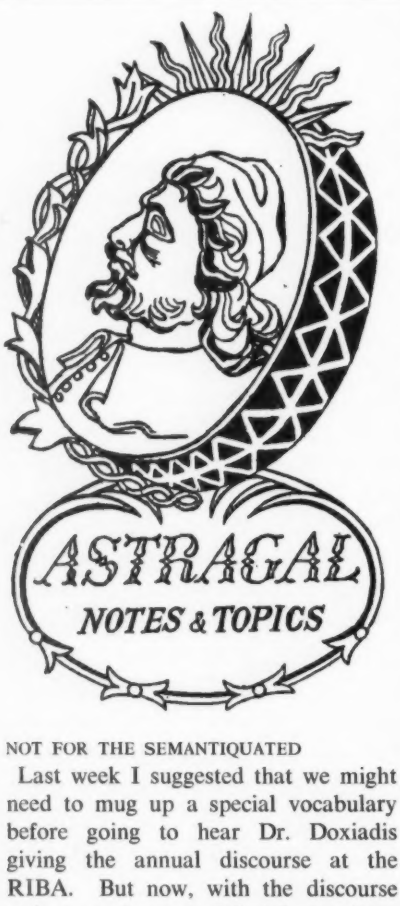
But, having gone so far along the (motor) road with Mr. Brunner, we disagree with his basic conception of urban renewal. He rests his case, apart from a passing reference to the value of pedestrian subways or walkways, almost entirely on the need to adapt the city to the requirements of the motor vehicle. Few will disagree with him when he says that the only practicable course is to accept the motor vehicle, and modify the environment to permit its use in large numbers. But how large? This is the crux of the matter, and Mr. Brunner was disappointingly—even suspiciously—vague when speaking about it. The implication, however, was unmistakable: on the principle that "the customer is always right," every private motorist who wants to must be able to use his car for every journey. Mr. Brunner only conceded to public transport the role of competing with private transport for the custom of the shopper or daily commuter.

The only published scientific estimate of the volume of traffic for which the road system of London should be designed in a motorized society was made by R. B. Hounsfield in his book *Engineering Aspects of the Transport Problem of London* (published posthumously in 1951). On the assumption that the number of vehicles would rise from 65 per thousand population in 1937 to 120, and after allowing for other factors, he calculated the potential volume of peak hour traffic at treble the 1937 volume. He calculated, also, that if the present street system continued to carry its existing load, 16 6-lane motor roads would be required to carry the additional traffic into and across Central London.

Congestion has, of course, prevented traffic from reaching anything like Hounsfield's figures. But there are already some 170 vehicles per thousand population, and if we are planning for a privately motorized society it must be assumed that the figure will reach 400, 500 or even more. If this is

what Mr. Brunner means by " large numbers " it would be interesting to see his calculation of the peak traffic volumes this could produce, and the number of motorways and the volume of parking facilities that would be required. We question whether he can demonstrate that it is possible to plan for the private car on this scale, at a tolerable expense, and achieve the civilized human environment which is the sole aim of urban renewal. For a rough calculation based on Hounsfield's figures suggests that if vehicle ownership reached 500 per 1,000 population 3 of the 16 square miles of Central London would be required for motor roads.

Mr. Brunner's suggestion that the Americans have failed to cure congestion because they have built too few motorways seems to be out of tune with the most advanced current American thinking. Our impression is that American planners are now recognizing the impossibility of planning for the use of the private car on the scale Mr. Brunner appears to envisage, and are seeking to revive public transport. What his paper does indeed demonstrate is the urgent need, which he fully recognized, for far more study and research into one of the most challenging problems of our time.



NOT FOR THE SEMANTIQUATED

Last week I suggested that we might need to mug up a special vocabulary before going to hear Dr. Doxiadis giving the annual discourse at the RIBA. But now, with the discourse only a week away, I feel I may have been doing the doctor and this institute an injustice. I've been reading an abstract, published in Dr. Doxiadis' own journal *Ekistics*, of an interesting report he made to a Warsaw conference on city planning. Although I didn't agree with everything he said, I must report that I didn't need a special guide to his vocabulary to understand his stimulating ideas, which included the theory of Dynapolis. By this he means a city of the future possessing the characteristics of dynamic development and expanding constantly in only one direction.

*

Ekistics? Oh, that old thing is something Dr. Doxiadis has thought up to put into one simple word " the science of human settlement." This is explained in a RIBA handout, which says that he sees architects, planners, sociologists and geographers as equal partners in the planning team.

*

But before we hear about Ekistics we shall be rolling up in force to the RIBA to hear William Allen's paper on "The Profession in Modern Society." I gather this is a contentious paper which could lead to a lively discussion between people who have views on co-operation between professions, the two-tier controversy and the professionalizing of builders.

THE HOUSES IN BETWEEN

Talking of professional collaboration, Arthur Ling gave a provocative talk at the ILA the other day to kick off a discussion on co-operation between the landscape architect and other professions. He said that every architect should be trained as a landscape architect because there was no clear cut division between the two. (He did not mean, of course, that all landscaping should be done by architects.) This seemed sensible enough in view of the complaints made by J. St. Bodfan Gruffydd, the landscape architect for Crawley new town. Mr. Gruffydd said that difficulties arose when an architect failed to realize what the landscape man was doing or failed to collaborate with him by siting buildings to make the best use of existing features. Most speakers thought that although Arthur Ling's notion was a good one, it was quite impossible to carry it out.

LOWDOWN ON HIGHWAYS

Every country seems to think that others may have hit on a better solution to the traffic problem. The other day I found an American magazine with one wistful eye on Munich, where trams are being sent underground at great expense, and the other on Ernest Marples who, it thought, " might inspire some fresh thinking among US traffic engineers and city planners." Mr. Marples, said this article, " may have hit upon a better solution than any he found in the auto-choked freeways of Chicago or Los Angeles " with his " pink zone in which only a minimum of moving traffic, and no parking at all, was allowed." It sounds bliss, doesn't it? But nothing was, in fact, done to cut down the amount of moving traffic in the pink zone, and many people parked in their usual anti-social manner. Still, it must have looked splendid from the other side of the Atlantic.

*

Meanwhile, discussions about the traffic problem continue. Last week the Ministry of Transport deputy chief engineer for motorways, J. C. Smith, spoke at the ICE about junction design and advocated three-level intersections between urban motorways and heavily-trafficked, all-purpose roads. His audience didn't disagree with this proposal, but several people criticized the Ministry for saving agricultural land at the expense of cramped intersections, meagre central islands, narrow shoulders and bad landscaping. Mr. Smith was cautious in his replies and showed that the Ministry is nervous of the farmers, but he indicated that it might have second thoughts about terminating motorways at large roundabouts instead of flyovers.

One or two speakers advocated traffic analysis before motorways were designed. No doubt the idea of "survey before plan"—long a planners' axiom—is still a novelty to highway engineers.

IT'S IN THE BAGNOLS

For more than an hour George Candilis, who was brought to England by the Yerbury Foundation, spoke at the AA about the social purpose of architecture while we waited with curiosity to hear him speak of his work as architect to the new town of Bagnols sur Ceze. This was a pity, because he had no time to answer some penetrating questions by Hugh Wilson (the architect of Cumbernauld New Town) and Graeme Shankland, who is working on the LCC new town.

*

Hugh Wilson wanted to know why, as it had taken him four years to house 1,000 people, Mr. Candilis was able to put up a new town of 15,000 people in four years. And Graeme Shankland asked if five or six storey walk-up flats were more economic than two-storey houses. Mr. Candilis said that most Frenchmen wanted houses with gardens, as did the Atomic Energy Authority which was behind the new town, but it was impossible to provide them. They had to accept the walk-up flats and six-to-fifteen-storey tower blocks at a density of nearly 300 to the acre. It all seemed overdeveloped to me though I noticed that thirty top scientists were allowed houses of their own, and I liked the use of colour.

A NICE CUP OF SEAWEED

Are you IN or OUT? Take a look around you. If your printed and woven fabrics are in clear gay colours you are IN. But you won't stay that way unless you make sure that your interior decoration, which includes cushions, coffee cups and gym slips, is in the muted colours now being exhibited by the British Colour Council in Portman Square. It's time to check up on your greens, and to make sure they are Seaweed, Willow Haze or Rosebud. And take care that your pinks are Melon and your ambers are Bermuda Beige, if you want to join in the good, clean fun of living like the fashion pages of the Sunday newspapers. But if you do go to this exhibition don't forget to record your disgust at seeing the Sunday-paper mentality coming into the naming of colours for vinyl tiles, linoleum and plastic sheeting. I hope manufacturers will realize that this attitude to building materials will not impress architects who are, after all, important customers.



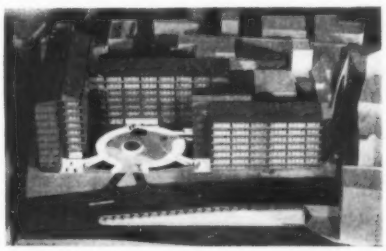
New offices for The Times, *on the site of the present offices in Printing House Square have been designed by Richard Llewelyn Davies and John Weeks, in association with Ellis, Clarke and Gallanaugh. The architects say that to reduce the scale of the buildings, and to make easy, clean junctions between the new buildings and the existing printing works at the rear, they have split each office block into two halves on either side of central corridors. This division made it possible to use half blocks of differing heights in order to meet the requirements of the "St. Paul's Ceiling" which differs from point to point over the site. It is interesting to see the return of the pitched roof which, the architects rightly say, enables them to present a clean-cut skyline.*

*

They will perhaps appreciate that this sort of thing is not a proper basis for colour ranges meeting the profession's requirements; and, perhaps more important, that as a result of the success in paint colours of BS. 2660 as an architect-designed range, it is now RIBA policy to encourage the development of similar ranges in other building materials.

INVISIBLE ÆSTHETIC

ASTRAGAL spent a disquieting half hour recently watching a film which showed exactly how infection spread in an American hospital from a middle aged lady named Mrs. Allen, suffering from boils. This film, entitled *Hospital sepsis: a communicable disease*, was made at the behest of an American firm of pharmaceutical chemists and is now going the rounds of English hospital boards. Greatly magnified swabs show the bacteriological counts taken from the air, the floor, the bedclothes and many places else at each critical moment of the day. Though there seems doubt in medical circles about how many bacteria really matter, there is none that at some concentration they *do* matter and that architects can contribute greatly—by a hundred carefully considered details—to keeping them at bay. The pay-off of the film was a still of Joseph Lister and a quotation of his dictum that all concerned in hospitals must "be able to see with their mental eye the septic ferments."



REPLIES ON THE DOTTY LINE

The JOURNAL has a good number of regular lunatic readers. By that I mean regular readers who also behave regularly like lunatics. In their relentless, zany way these people fill in the enquiry form (post paid) on our back page with advertisers' names and send it to us. And they go on doing this even though they don't get a reply. This isn't discourtesy on our part: it is simply that these regular readers can be recognized only by their handwriting and postmarks. There's one in Manchester, one in Ilford, one in Sheffield, one in Perth and many in London. I know *you* wouldn't do such a thing. Still, you might be more careful next time. . . .

FOREST TREE COMMISSIONED

"There is to be no hesitation in replanting elms in the Royal Parks." That cheerful sentence comes from the MOW's report on trees in Kensington Gardens (HMSO: 1s. 6d.), which calls the elm "possibly the most gracious and imposing in form of growth of all the English park trees" and promises periodic inspection and lopping when necessary. I hope this report will reduce the unnecessary destruction of elms far beyond the borders of Kensington

Gardens. We don't often hear of people being squashed or even slightly damaged by elms, yet these trees are constantly being removed because of their bad reputations.

*

I'm glad to see from the report that the Gardens are not to be changed very much. The four wide avenues which meet at the statue of Physical Energy will remain as they are, but the four small avenues radiating between them will have a different character. Two out of every five trees lining the walks will be removed and the remainder will be the basis of a series of small groups " on a principle similar to that advocated by Humphrey Repton." I should have thought such an arrangement was more suitable for avenues of a grander scale. I only hope the forest trees in this part of the Gardens will not be replaced by smaller, suburban varieties.

*

Finally, the Editors tell me that, if you haven't yet applied for your copy of the Index to the Technical Section, you'll find a form further back in the JOURNAL: applications should be in by March 14.

ASTRAGAL

DIARY

The Architect and the Church. Conference organized by Christian Teamwork at 1, Whitehall Place, London, S.W.1.
MARCH 4 TO 5

The Profession in Contemporary Society. Talk by W. Allen. At the RIBA, 66, Portland Place, W.1. 6 p.m. MARCH 8

The Structural Aspects of Tall Building. A Lecture by Lt.-Col. G. W. Kirkland at the Brixton School of Building, Ferndale Road, London, S.W.4. 6.45 p.m. MARCH 8

Civic Architecture—Swiss Conditions and Buildings. Two lectures by Professor A. H. Steiner at University College, Gower Street, London, W.C.1. 5 p.m.
MARCH 9 AND 10

Architecture in Evolution. The Annual Discourse by Constantinos A. Doxiadis. At the RIBA, 66, Portland Place, W.1. 6 p.m.
MARCH 10

User Requirements, New Types and Techniques. First of a series of four illustrated talks by Oliver Cox and Robert Purdew at the AA, 34/36, Bedford Square, W.C.1. 6.15 p.m. MARCH 10

Colour Trends in Interior Decoration. British Colour Council exhibition at 13, Portman Square, London, W.1. Monday to Friday, 10 a.m.—4.30 p.m.
UNTIL MARCH 18



Colin Rogers

F. P. Tindall, M.A., M.T.P.I.,
County Planning Officer, East Lothian

Walter Segal,
Registered Architect

Eric de Mare, A.R.I.B.A.

High Status and High Buildings

SIR: It is heartening to note in your thoughtful leader " A Policy for Tall Buildings " (AJ, February 18) your implication that there is still scope for the exercise of free-will in allocating accommodation in tall office buildings, at any rate of the one-occupant type. In the United States this is being increasingly done by caste rule, the biggest noise on the floor taking the corner office with the nicest view and his minions radiating from it in descending order of significance.

No doubt it will soon be possible to work out how many employees on any given floor will be in receipt of a salary in excess of (say) £1,250 a year, and will therefore be entitled to a certain minimum quantity of natural light; so that the architect will be able to calculate his fenestration commitment floor by floor. The topmost layers will presumably need to be very highly glazed indeed, since these are commonly given over to presidential and vice-presidential suites. I need not add that a bigger noise should occupy an office of precisely the same cubic content as all other noises of similar volume in the organization concerned.

You also speak of what the sociologists may have to teach us. Architects in a dilemma over such problems will, I think, derive considerable enlightenment (if not comfort) from reading the chapter " Pecking Orders in Corporate Barnyards " in Vance Packard's *The Status Seekers.* Most of the characteristics of the modern trend are dealt with in this book, such as what makes of car the different strata of employees may own, when they may expect to be awarded a key to the executive washroom, which washrooms should be provided with a gold faucet, and so on.

COLIN ROGERS

Harrow

New or Expanded Towns?

SIR: Eric Stevenson in his article on Glasgow Overspill in the issue of February 18 raises many fundamental points: 1. The desirability of spreading Glasgow's overcrowded population into the many small burghs throughout Scotland. 2. The present haphazard distribution of the towns entering overspill agreements with Glasgow Corporation. 3. The lack of any central government co-ordination or of any link with regional developments in the Geddes sense.

He has pointed out the weakness of these small burghs with part-time officials, their lack of financial resources; and indeed in Haddington a penny rate brings in only £250.

His solution, however, is to avoid the problem by concentrating overspill in a few places large enough to warrant a New Town Corporation and to suggest that the employment of part-time architects will solve the architectural and social problems of the small burghs.

New Towns are the most expensive way, next to central redevelopment, of housing city overspill. They inevitably have an ill-balance of population, long years of social pioneering and a difficult hand-over period. Our age profile diagram given in the article shows how the ill-balance of the typical overspill population marries with the static local population of Dunbar to produce a virile structure which would be reflected in all aspects of life in the burgh. What the small burghs primarily need is increased population, diversified employment and increased wealth, to provide the social amenities needed in the second half of the twentieth century.

I would suggest that the right solution to the problems posed by the article would be the establishment of one or more Expanded Town Corporations, on the same lines as a New Town Corporation, which, instead of building a single town of 60,000 would be charged with expanding several small towns, say 12 towns by 5,000. Such an Expanded Town Corporation could gather a staff equal to the fine planning and architectural opportunities and could use the experience gained in one town for the next. It would have the resources to provide industrialists with the full services they require, if they are to move. They would acquire land, build houses and factories and carry out whatever central redevelopment is needed.

I am sure that most small burghs would welcome such a Corporation. Most are anxious to expand but are hesitant in view of their scanty financial resources, their lack of expertise and the technical difficulties. I believe they would co-operate with such a Corporation, pay the rate contributions and take over and administer the area once the development was complete.

Before concluding I must correct two points in Mr. Stevenson's article. The rather conventional scheme of 205 houses was

designed by J. A. W. Grant, architect for the Haddington Town Council and the Scottish Special Housing Association, and the rather crude 5 ft. fluorescent vertical lanterns were chosen by the burgh surveyor. While the Planning Department has played its full part in all aspects of the town development scheme at Haddington, most credit must go to the Town Council and its energetic Town Clerk and Chamberlain.

F. P. TINDALL
County Planning Officer, East Lothian
Haddington

Patio House

SIR: I was delighted to see the patio house project for Aldershot (AJ, February 18) which shows that it can be rewarding to study solutions for concepts of living instead of nursing space neuroses, playing with "structure" and milking excessively the maison Jaoul.

May I be forgiven for saying that the first edition of *Home and Environment* appeared in 1948, the second in 1953 and that my first patio house studies were published in 1942 in AJ, *A&BN* and *Building*.

WALTER SEGAL
London

We regret that the source of our information was inaccurate.—The Editors.

Iron-Framed Buildings

SIR: A. T. Morris, Borough Surveyor of Shrewsbury, is wrong in claiming in his letter that the Benyon, Bage and Marshall mill of 1796 at Shrewsbury is a multi-storey framed building. The floor beams and internal columns are iron, but the outer walls are solid, supporting brickwork. Though both the Crystal Palace and the "Brompton Boilers" preceded the Sheerness Boat Store as complete iron-framed structures, they cannot strictly speaking be called multi-storey. The Boat Store can therefore still claim to be the first multi-storey iron-framed structure in the world. Any more challengers? I hear a murmur of "1849" from New York, but so far the murmur is faint. I believe that Professor Skempton is now investigating this possibility.

Incidentally, we have managed to place the Boat Store on the preservation list, for what that may be worth. If no one wants to use it and funds can be raised, I suggest that the building should be re-erected on a suitable site as a Museum of Industrial Archæology, perhaps as a special section of the Science Museum. To add to the phantasy, why not re-erect the threatened Euston Arch as an approach to the Museum? The two structures would serve as magnificent foils to each other.

ERIC DE MARE
London

Correction

In the JOURNAL of November 12, 1959, p. 486, Dr. Hajnal-Konyi was misprinted as stating "... For many years the Ministry insisted on the extensive transverse prestressing of composite slab bridges which is quite unnecessary ..." This was a printer's error and the word "extensive" should read "expensive."



RIBA

Cost Control

A further conference on methods of control of the building costs at the design stage is to be held at Nottingham University from Friday until Sunday March 25-27. The Conference, which is sponsored by the Cost Research Liaison Committee of the RIBA and the Royal Institution of Chartered Surveyors, will be on the same lines as those already held elsewhere. The Conference arrangements are being made jointly by the RIBA and the Nottingham, Derby and Lincoln Society of Architects. It is primarily intended for the Midlands region, and it is unlikely that there will be a further conference in this area.

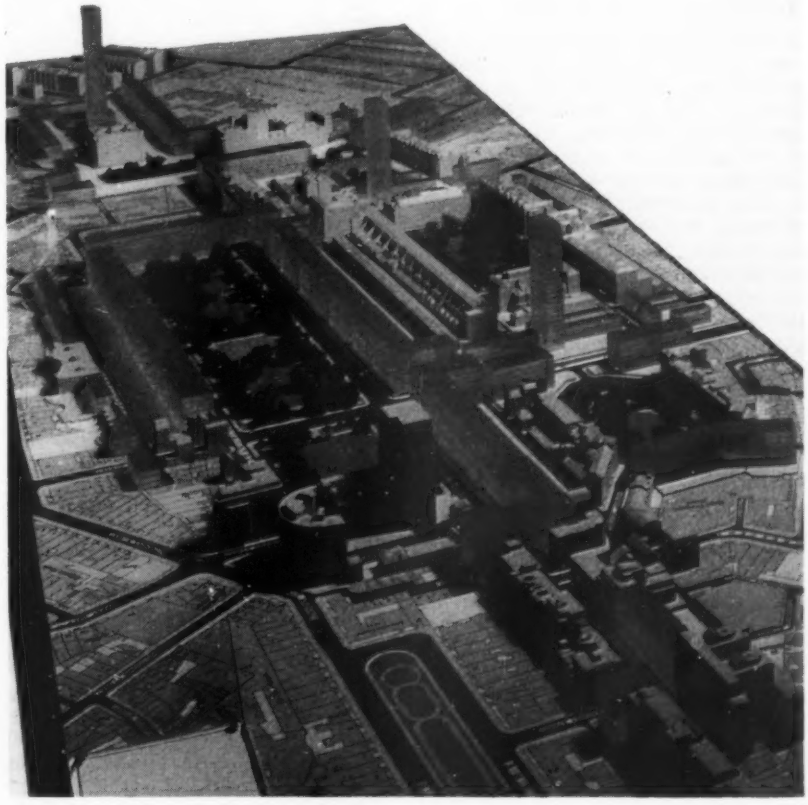
Applicants for the Conference, which is residential, are asked to write to W. L. Dunn, Messrs. Chamberlain and Merchant, Park House, Friar Lane, Nottingham, not later than Monday March 7, stating age, professional or other qualifications, place of work, and experience in the application of cost control methods. The Conference fee is eight guineas inclusive of accommodation.

MOHLG

Controls Extended

The erection of large agricultural buildings or groups of buildings has been brought under planning control from February 25,

Outline plans by J. Douglass Mathews & Partners and Lionel Brett were submitted to the LCC last week for the redevelopment of the Cadogan Estates around Sloane Street, London, at a possible cost of £25 million. The model, below, shows what would be London's highest new building, a 350 feet 35-storey block of flats on Sloane Gardens, south of Sloane Square, and two 26-floor blocks west of Sloane Street. Cadogan Place would be rebuilt with 7-floor terrace flats linking across Sloane Street to similar blocks running half the length of the road. A 2,000-car parking garage is planned north of Peter Jones and Sloane Square would be modified into a more efficient roundabout. Terrace blocks would have a screen of precast concrete units in front of the windows forming private balconies but treatment of point blocks is not yet decided. If the demolition of the Royal Court Theatre is proposed trouble can be expected, but a new theatre will probably be included in the plan. Much of Osbert Lancaster's "Pont Street Dutch" would also go.



under an order laid before Parliament. Planning permission will now be required for any agricultural building occupying a ground area in excess of 5,000 sq. ft. either by itself or when aggregated with other buildings (other than dwelling houses) within 100 yards, if erected or in course of erection on the same agricultural unit within the two preceding years. An order has also been made to control car salerooms. The change of use of a shop for use for the sale of motor vehicles now constitutes development requiring planning permission. The orders in question are *Town and Country Planning General Development (Amendment) Order*, 1960, HMSO 283 (3d.), and *Town and Country Planning (Use Classes) (Amendment) Order*, 1960, HMSO 282 (3d.).

BUILDING CENTRES

Provincial Developments

The Building Centre announces that the new Building Centre in Manchester is expected to open next May, and that there is every hope of a satisfactory outcome to discussions now proceeding on a proposed Centre for Birmingham. The Building Centre points out that as centres are entirely dependent for their income on the rents paid by exhibitors they must be assured of adequate backing from exhibitors, which in turn depends on their value to the building industry in displaying products and providing technical information. The Manchester and Birmingham centres will remain entirely independent financially, with a constitution similar to that of the London centre.

ICE PRESIDENT

Sir Herbert Manzoni

Sir Herbert Manzoni, City Engineer and Surveyor, Birmingham, was elected President of the Institution of Civil Engineers at a special general meeting on February 23. He succeeds A. C. Hartley, who died on January 28. Sir Herbert will complete the late president's term and the next year, and will make his presidential address in November. Sir George McNaughton becomes the senior vice-president. Sir Herbert began his lifelong connection with the City of Birmingham in 1923, as Senior Engineering Assistant, Sewers and Rivers Department. From 1928 to 1935 he was Deputy City Surveyor, and in 1935 was appointed City Engineer and Surveyor. He is a registered architect.

TEAM WORK

Cambridge Conference

The Eastern Counties Joint Board of Architects, Quantity Surveyors and Builders has announced details of a conference, the first of its kind to be held in East Anglia, which has been arranged at the University Arms Hotel, Cambridge, on Friday, April 1 at 10.15 a.m. on "Team Work in Building." The speakers will be C. A. W. Harmer, Director of Pye Ltd., E. D. Jefferiss Matthews, Norman Harris, quantity surveyor, and T. V. Prosser, Immediate Past-President, NFBTE.

ARCHITECTS' INCOMES

Some Facts from the Pilkington Report

The following tables are reprinted from the report of the Royal Commission on Doctors and Dentists Remuneration (HMSO, Cmd. 939, 15s.) and are based on the replies to the Commission's postal questionnaire. Incomes are earned incomes agreed with the Inland Revenue, and people not working full-time have been excluded. The questionnaire was sent to 2,980 architects, of whom 1,955 returned completed questionnaires.

Table 2: numbers with incomes of £6,000 and over

Income £	1954/55	1955/56
6,000–	2	3
6,400–	1	3
6,800	1	5
7,200–	2	5
7,600–	2	2
8,000–	2	1
8,400–	1	1
8,800–	—	—
9,200–	2	3
9,600–	—	—
10,000 and over	6	7
All incomes of £6,000 and over	19	30

Table 1: income: general statistics

	Number	Average £	Lower quartile £	Median £	Upper quartile £	Highest decile £
1954/55						
1. Great Britain	1,633	1,263	730	925	1,350	2,102
1955/56						
2. Great Britain	1,759*	1,365	779	984	1,430	2,270
By age						
3. Under 30	291	747	650	724	800	927
4. 30–34	324	926	749	849	988	1,141
5. 35–39	254	1,273	832	984	1,263	1,933
6. 40–44	277	1,500	930	1,159	1,543	2,265
7. 45–54	399	1,852	1,021	1,380	1,999	3,146
8. 55–64	149	1,686	927	1,350	2,035	2,798
9. 65 and over	65	2,377	911	1,874	3,006	4,091
By type of work—without subsidiary occupation						
1954/55						
10. In private practice alone or in partnership	374	2,152	987	1,621	2,406	4,053
1955/56						
11. In private practice alone or in partnership	402	2,393	1,034	1,772	2,801	4,669
12. Salaried employees of professional firms	315	880	698	802	998	1,210
13. Central and Local Government Service and all other salaried appointments, including teaching	828	1,088	783	941	1,246	1,669

* Includes 60 women.

Table 3: income in 1955/56 of those elected to corporate membership of the Royal Institute of British Architects in 1950 or later, who were under 30 at the time of election

Income £	Year of election					
	1955	1954	1953	1952	1951	1950
200–	3	1	—	1	1	—
400–	10	5	7	6	2	2
600–	34	48	51	31	38	30
800–	2	8	20	21	28	27
1,000–	—	3	3	6	5	15
1,200–	—	—	1	1	2	3
1,400–	—	—	—	—	1	—
1,600–	1	—	—	—	—	1
1,800–	—	—	—	—	1	—
2,000 and over	—	—	—	3	2	—
All incomes	50	65	82	69	80	78
Average incomes	£665	£717	£758	£914	£858	£863

Table 4: capital outlay*

Amount £	Number
Nil	98
1–	57
500–	58
1,000–	72
2,000–	48
3,000–	31
4,000–	21
5,000–	17
6,000–	10
7,000–	6
8,000–	6
9,000–	4
10,000 and over	14
	442
Average based on 442 principals	£1,995

* Payments by principals in professional practice for goodwill and other capital invested in the practice; payments made and to be made for share of partnership assets.

Table 5: outlay of principals since January 1, 1952, not ranking as expenses for income tax purposes

Amount £	Number
Improvement of practice premises	
Nil	273
1–	114
500–	22
1,000–	6
1,500–	2
2,000–	7
3,000–	4
4,000–	2
5,000–	1
6,000–6,999	1
	442
Additional equipment and fittings	
Nil	221
1–	60
100–	54
200–	27
300–	14
400–	9
500–	15
600–	9
700–	3
800–	6
900–	4
1,000–	11
2,000–	5
3,000–	1
4,000–	1
5,000–	1
6,000–6,999	1
	442

Note: The figures in this table may overlap with those in Table 4.

BRF

"Living with the Motor Vehicle"

In his paper "Cities—Living With The Motor Vehicle," given to the British Road Federation recently, Christopher Brunner argued that the social and economic survival of our cities and central areas depended almost entirely upon acceptance of the fact that the motor car had come to stay, and would increase in numbers. The outstanding feature of many of the urban centres was, he said, their failure to serve as a fulcrum of a balanced community life.

He saw two alternative courses a city might take in coming to terms with the motor vehicle. Of the first—forbidding the use of motor vehicles in the hope that this would make it unecessary to change the environment—he said: "People's behaviour makes it quite clear that they want to have cars, because they buy them as soon as they can afford them. They also acquire them in order to use them." The second course, "the only practicable one," was to accept the motor vehicle, "and from this must follow sooner or later the modification of the environment to permit motor vehicles to be used in large numbers."

Some people came into cities to spend money in them; others came in to work. "It is very much to any city's interest to take such steps as may be necessary to ensure that all potential buyers can get into what I shall term the spending area as easily as possible, can leave their cars conveniently and cheaply, and can get away home again with the minimum of trouble, loss of time, or friction with the authorities. Some decentralization of industry is essential and, equally, there are areas which would doubtless benefit from a decentralization of commerce. However, how much of its office employment does a city wish to see move elsewhere?"

"People are not going to put themselves to trouble and expense in order to maintain or enhance the prosperity of any particular city; rather will they switch their pattern of employment and of spending to conform with the way of life they prefer. A city is not in the position of a dictatorial authority which can determine without cost and effort to itself how it will treat the people on whose goodwill it depends; rather it is in the position of a seller of services seeking customers.

"What I wish to emphasize is the complete futility of any negative approach. A great and challenging task confronts us—no less than the renewal of our cities—and positive energetic action is needed. There is no single solution. Each area calls for its own unique approach."

Of the need for new highways to carry traffic into the cities and to enable it to circulate when it gets there Mr. Brunner said "Sometimes, it is alleged that urban motorways have not cured traffic congestion in the United States, and the conclusion is drawn that they are therefore not a cure. This is nonsense. If some urban motorways do not cure traffic congestion, the American approach, which is the correct one, is that this may prove only that in a particular city enough may not yet have been built.

"The vital point is, and this has been made often by the RIBA, that urban motorways are essentially part of the whole problem of urban re-development. The ownership and use of motor vehicles, and especially cars, has created a world-wide crisis in the life of cities, where there is a choice between either allowing worsening congestion to aggravate still further the decline in the centres, or of accepting the motor vehicle and re-building the cities with urban motorways and parking facilities integrated into the schemes. The ownership of personal transport is already, and will become even more, a major factor in people's lives, and there is really no alternative but to recognize the need for a policy of systematic urban renewal."

THE PRINCIPLES OF TOWN AND COUNTRY PLANNING

A Text Book for Low Density Development

Principles and Practice of Town and Country Planning. Lewis Keeble. Estates Gazette. 50s.

This book was first published in 1952 and this Second Edition has been enlarged and considerably revised. Its scope is tremendous. It aims to cover in one large volume all the different aspects of Planning—National, Regional, Local and Detailed Planning Designs. There is little doubt that it is already being used widely as a Town Planning textbook.

The material is divided up into three main parts—Regional and Town Planning, Space Standards and Detailed Planning Design and Development Control and Planning Organization. There is a wealth of valuable descriptive material here which can help towards an understanding of current town planning practice and also help those involved in the technical and administrative aspects of planning to function more efficiently. The section dealing with Development Control and Planning Machinery can be recommended to architects especially as a straightforward account of present practice which may shed a little light on what is often regarded solely as specially designed machinery for obstruction.

But this book sets out not only to accurately describe "practice"; it also sets out to propound "principles." From the start Lewis Keeble takes his stand that the basis for Town Planning should be "Planning by demand" which he defines as "to seek to arrange the development of land in such a way that it accords as closely as possible with the wishes of the majority." The author notes the telling point of Catherine Bauer's that "Conscious consumer wants are limited by experience and knowledge . . . by and large you can only want what you know." His answer to this is that, so far, sociologists find it difficult enough to find out what people think they want so that we shall have to make do with this. The other main principles which he puts forward follow logically enough if the main one is accepted, although Keeble frequently disagrees with existing planning machinery in the technical methods that should be used to achieve its objectives.

The section which deals at length with Space Standards and Detailed Planning Design ought to be studied by all architects even though they may find themselves in disagreement with much of it. Here one finds a detailed case made out for low density urban housing development supported by a powerful battery of statistics and documentation as large a proportion of semi-detached houses as possible (consumer demand clearly regarding them as preferable to terrace houses), 70 ft. between facing fronts of houses with as many houses fronting a road as possible, back gardens of 60 ft. minimum length, plots a minimum of 25 ft. wide, flats reduced to a minimum (20 per cent) in view of their higher costs. Residential densities would therefore range, on the basis of the ideal principles put forward, from an average of about nine houses to the acre to a maximum of about 40 persons to the acre if old people's dwellings and flats are included. A case is also made out against Radburn or footpath access-type layouts, against communal garden space or "outdoor rooms" instead of back gardens and against the concentration of metropolitan population in dwellings of high density.

Thus the author argues for what he regards as the orthodox policy ". . . of decentralizing homes and employment from metropolitan areas to the greatest possible extent." Obviously, on the basis of giving the majority of the people what they think they want, this means the establishment of the principle of low density as the desirable objective. Moreover, Keeble denies that this would have any appreciable effect on the overall size of towns and cities and produces a series of statistics to show that "the notion that net residential density appreciably affects the spread of towns is completely fallacious."

Now all this may be dismissed by many architects and some town planners but the fact has to be faced that, right or wrong, these views still command very strong support. It is high time those who feel that there is a case to be made out for higher densities and urbanity turned their attention to a detailed consideration of the study of space standards for urban areas and to dealing with the complex social and economic questions involved. In the meantime generations of future town planners will continue to be reared on a diet of low density and "Planning by demand."

For those who accept such principles this book is a heavy reinforcement for their armoury; for those who are inclined to question the logic of such principles this book should serve as a challenge which can only be countered by similar hard work and fundamental research.

A.G.

WALLPAPER AND FABRIC SHOWROOMS IN BERNERS STRE



Sanderson's new headquarters in Berners Street, London, W.1 (designed by Slater and Uren; interior design adviser, Beverley Pick; landscape and horticultural adviser, Philip Hicks) is an outstanding "prestige" building and sets a new level in London shop and showroom design. The client having explored new apartment stores in America with their drive-in entrance ways, open planning and courtyard gardens, was fired to reproduce these ideas in London, and the architects have produced a building which makes an immediate and stimulating impression of spaciousness and light, in which the floor-by-floor division one is accustomed to in large department stores has been replaced by a glass-walled spiral in which one-storey and two-storey height display areas are linked round a central court containing a carefully informal garden, and are visible in a single eyeful from the ground floor entrance, and from one another. These showrooms occupy 34,500 sq. ft. of floor space on the first, second and third floors of the building, in addition to a large foyer and 5,000 sq. ft. of trade showroom on the ground floor. Above are two storeys of office space completing the main building, and another two storeys in a rather squat tower block behind.



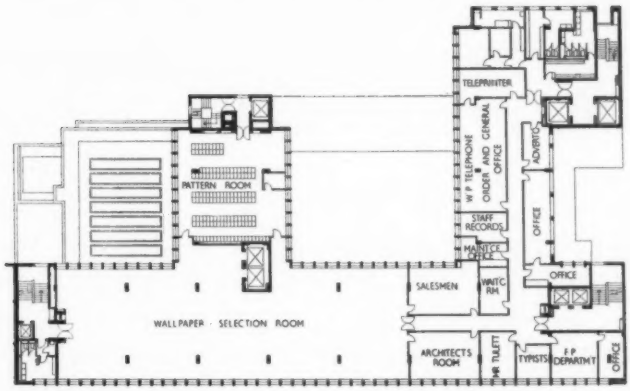
TREET, LONDON, W.1



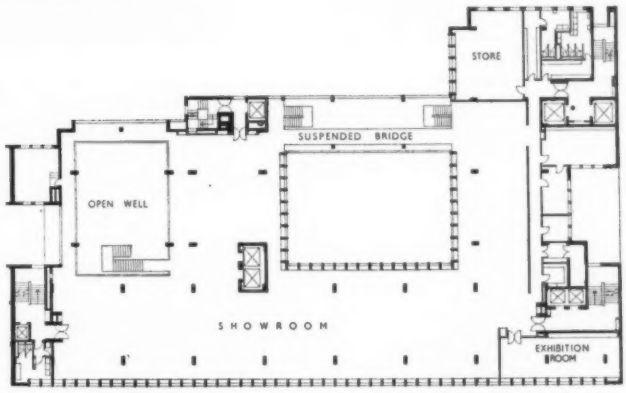
he front of the building (shown, left) can only be seen bliquely. The glass curtain wall is divided by deep ullions which divide the face of the building into 27-ft. ructural bays. The mullions are symmetrical in section, and ntain all the service ducts, with the glass set in nearer e interior face of the mullions. By setting it further



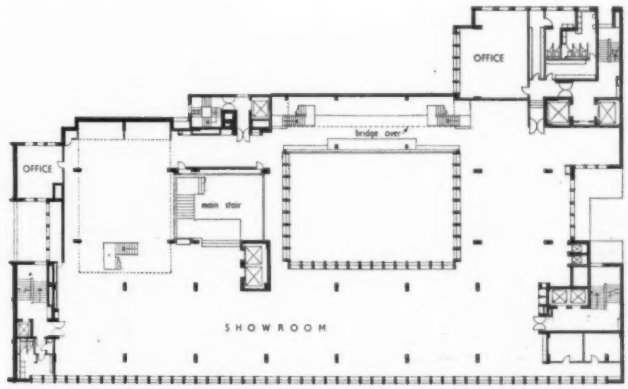
ck in the centre mullions the architects have produced the fect of a band of deeper colour above the entrance canopy, hich relieves what might have been a rather monotonous eet frontage. The entrance allows access for cars, which n be parked in an underground garage with parking ace for 70, and leads into the central court round which building spirals up. Here a vaguely but attractively panese garden has been laid out with water spouting into ng rectangular pool from a black marble monolith, and whole design, composed of boulders, pebbles and vergreen plants, is dominated by a full-grown weeping ch tree (shown opposite, bottom, from the first floor st showroom area). Top, another view of the courtyard king out to Berners Street between the square black lars which define the entrance and exit for cars. A glass l marble mosaic by Jupp Dernback-Mayen is to be



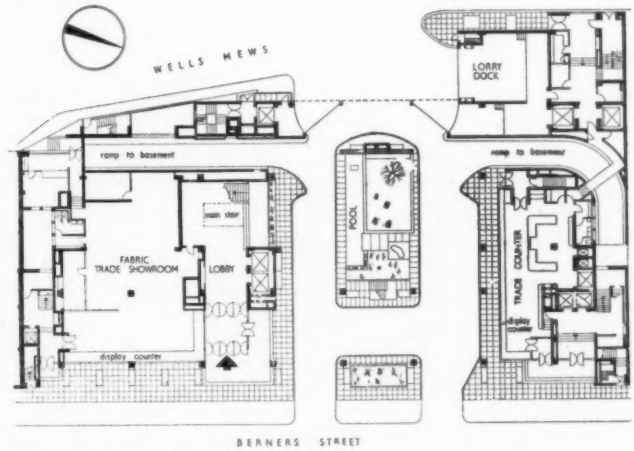
Third floor plan



Second floor plan

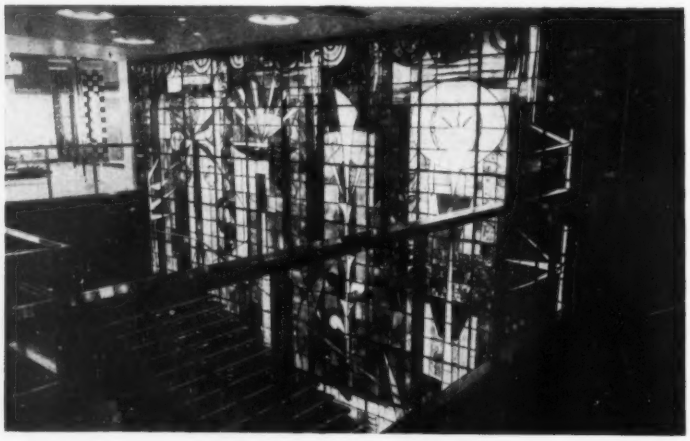


First floor plan



Ground floor plan [Scale: $\frac{1}{16}$" = 1' 0"]

WALLPAPER AND FABRIC SHOWROOMS IN BERNERS ST., LON

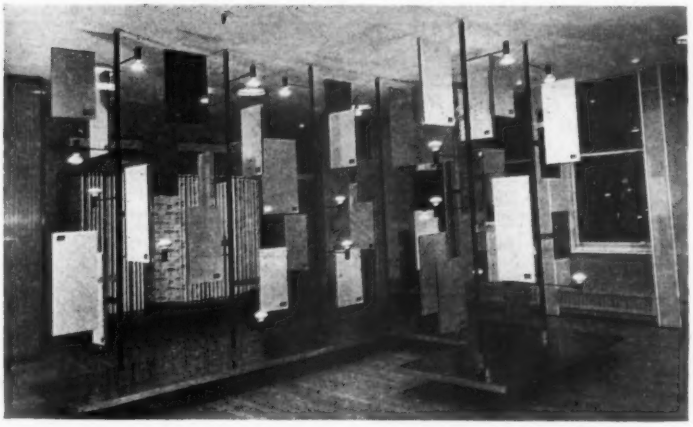


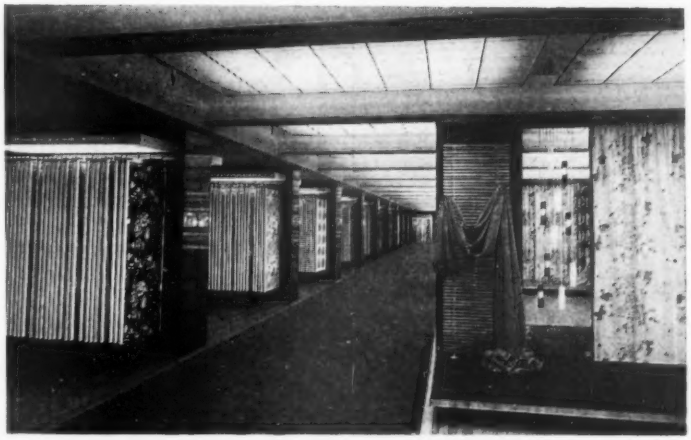
seen on the left of the entrance. At night this area is brilliantly lit and shut off from the interior by an ingenious security curtain. The lower picture, on page 357 shows the ground floor foyer, to left of entrance, where the client, having examined 6,000 fabrics and 4,000 wallpaper designs, and selected paints to go with them, can sit down and think it all over before tottering out to the roar of Oxford Street. Behind is John Piper's brilliantly coloured stained glass mural (claimed by Sanderson's as " the largest secular stained glass mural in the world ") and on the left is Epstein's bust of Ivan Sanderson. Left, a nearer view of the Piper

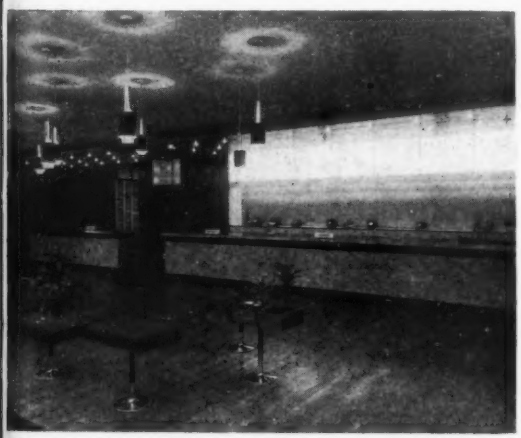


LONDON, W.1: continued

mural from the first floor balcony link. This internal "window," which was executed by Patrick Reyntiens, is two storeys high and lit from behind with cold cathode strip lights. The design is abstract, but suggestive of plant life. Its colours are rich and beautiful. In front of it a light, open staircase leads to the first floor and the succession of specialised showrooms, in all of which however, samples of fabrics, wallpapers and paints are displayed together in various ingenious ways, as left, below, in the two-storey exhibition area where fabrics are shown on a series of two-storey-high vaned columns. Here display rather begins to get out of hand: the light fittings at various heights and the rectangular "flower beds" full of coloured pebbles, houseplants and bowls of crumpled velvet are too much of a good thing. Top right, 75 variously sized panels display paints in different colours and finishes near the wallpaper self-service department. Right, the second floor fabric showroom: 6,000 samples are on view here in specially designed racks, brightly lit by the luminous ceiling. Below, the wallpaper service counter, and below right, the "pattern bar." The one-legged stools and jardinieres in this area look fussy and uncomfortable,



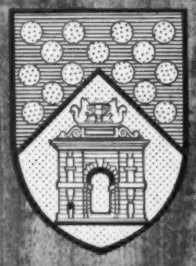








Bottom right, some of the small "room" displays in which papers and fabrics can be seen together. Throughout these showrooms the architect and display designer have clearly co-operated closely. With so much colour and pattern on view, however, as the purpose of the building required, one wonders if the client was wise to be so lavish with embellishments to the building itself. A strong inclination for white distemper and blue casement cloth was experienced by one explorer by the time the third floor had been reached. General contractors, Holloway Brothers (London); structural engineers, W. A. Mitchell; quantity surveyors, Selby & Sanders.



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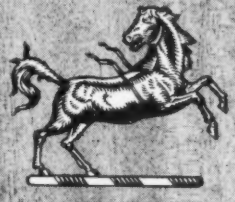
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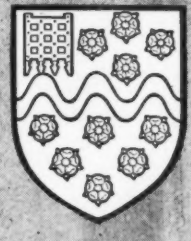
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technical section

THE INDUSTRY

From the industry this week Brian Grant reviews a booklet on electric heating methods for churches and describes a new bath, a w.c. for children, a range of cork floor tiles, plasterboard ceiling slabs, a vacuum cleaner and a standard range of circular duct fittings.

Church heating

A recent publication (*Keeping the Congregation Warm*) by the GEC, points out that all Electricity Boards offer low rates at night and at week-ends, when churches and similar buildings are mainly used. The booklet goes on to deal with various heating methods, either warm air from fan operated heaters, tubular or storage heaters, or radiant heaters to warm the congregation rather than the building. While the publication should not tell architects anything they ought to know already, it could be quite useful as a general introduction to wave at clients. (*The General Electric Co. Ltd., Magnet House, Kingsway, London, W.C.2.*)

New sanitary equipment

At the end of last year Ideal announced a new 5 ft. Standard Lowline bath to supplement the existing 5 ft. 6 in. model. Made in cast iron with a white (or seven colours) vitreous enamel finish, it has a low internal depth and a flat bottom to make it safer for the young or the elderly. Taps can be fitted centrally, in either corner, or on the wall, when the bath is supplied without drillings.

Another new fitting is the Sanwall 12-in. closet, which is much the same as the recent full-size model, but which is intended for primary schools, children's hospitals and similar buildings. It is available with a vertical or horizontal back inlet and when installed is clear of the floor for easy cleaning. (*Ideal Boilers & Radiators Ltd., Ideal House, Gt. Marlborough Street, London, W.1.*)

Cork flooring

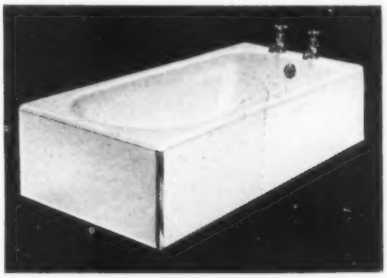
Britcork floor tiles are made in four different densities for different types of use, and in various thicknesses. The standard size is 11¾ in. square, but non-standard sizes can be produced to order, and there is also a range of skirting coves and quadrants and a standard round nosed stair tread. There is a choice of three shades, dark, medium and light, and rebated as well as tongued and grooved tiles are available. Laying should preferably be done by specialists, and, while it is difficult, as always, to give an average cost, the makers suggest 35s. to 40s. per yard for $\frac{5}{16}$ in. B32 (heavy duty) tiles in the London area, this figure including two coats of plastic or similar sealing compound. (*British Technical Cork Products Ltd., Caversham Mill, Mill Road, Caversham, Reading, Berks.*)

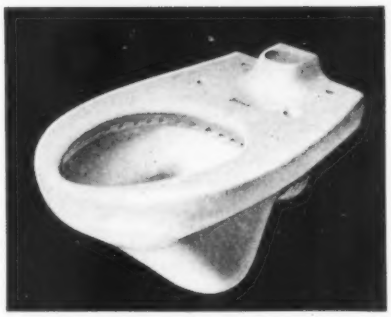
Ceiling finishes

The photograph on the right shows "Blue Hawk" Varitiles which are 16 in. square plasterboard slabs, insulated with aluminium foil at the back, and faced with plastic foam and washable p.v.c. made in a variety of patterns and colours. Installation is comparatively simple: a metal channel is screwed to the ceiling or wall, and the tiles are fixed with a small rectangular plate screwed to the channels at intersections. Cost, not including fixing, is about 30s. per square yard and, while the installation is permanent, the tiles can be removed for access to cables or ducting. (*British Plaster Board Ltd., Bath House, 82, Piccadilly, London, W.1.*)

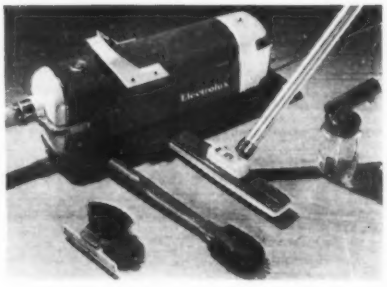
New vacuum cleaner

Since cleaners are presumably bought without architect's advice there is not very much reason for referring to them in these notes, but it seems worth mentioning that the new Electrolux model 65 has been well









Right top to bottom: the 5-ft. Standard Lowline bath and the Sanwall 12-in. closet, both by Ideal Boilers and Radiators Ltd; fitting the Blue Hawk Varitiles; the Electrolux 65 vacuum cleaner.

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thought out, as the various attachments will mostly do two jobs. The floor attachment can be converted to a carpet nozzle, and the duster can be reversed to form either a brush or small upholstery nozzle. Most cleaners have such a battery of separate attachments for various jobs that half of them are never used. With this model almost all the cleaning can be done with two attachments only. (*Electrolux Ltd., 153, Regent Street, London, W.*1.)

Standardized duct fittings

Wilmot Breeden, known to most people as makers of all kinds of fittings for the motor industry, are now producing a standard range of circular duct fittings, in diameters from 3 in. to 12 in. The majority of fabricated bends in ducting are welded up from segments and may well have a fairly considerable flow resistance if air velocities are high. These new Velflo fittings are formed in dies from sheet steel and are automatically welded to give a smooth internal surface so that losses are kept to a minimum. This is a particular advantage where ducting is to be used for dust extracting or conveying, as particles are not likely to be trapped.

The fittings are produced in 30, 45, 60 and 90 degree bends in mild steel, which can be galvanized, coated with plastic or painted. Prices are low, with considerable reductions for quantity. (*Wilmot Breeden Ltd., Goodman Street, Birmingham* 1.)

INFORMATION CENTRE INDEX FOR 1959

An alphabetical index covering Information Centre items and special articles published in the Technical Section during the twelve months ended December 31, 1959, ***is being prepared. Readers who wish to have a copy—it is free of charge—should complete the form below and post it to the Technical Editor,*** THE ARCHITECTS' JOURNAL, ***not later than March*** 14, 1960. ***This form will not be acknowledged.***

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17 CONSTRUCTION: GENERAL

light cladding, 2 stability

In the first article of this series, which appeared last week, the author, R. Michael Rostron, considered heat transmission. He now turns to stability, considering first the methods in current use for preventing distortion in frames and panels; and concluding with a rehearsal of current data on designing against wind load.

The accommodation of dimensional changes in buildings has always been a serious problem. The multiplicity of joints, the use of dissimilar materials and the relative structural weakness of light cladding have aggravated the problem by concentrating these changes in the wall and great care is necessary in design to avoid failure.

Dimensional changes may be classified under three headings:

1. Changes caused by relative thermal movement of materials.
2. Changes caused by absorption of moisture.
3. Changes caused by settlement and deflection of structure.

It is likely that each type will be present to some degree in all light cladding constructions, but movement is usually accommodated in one joint.

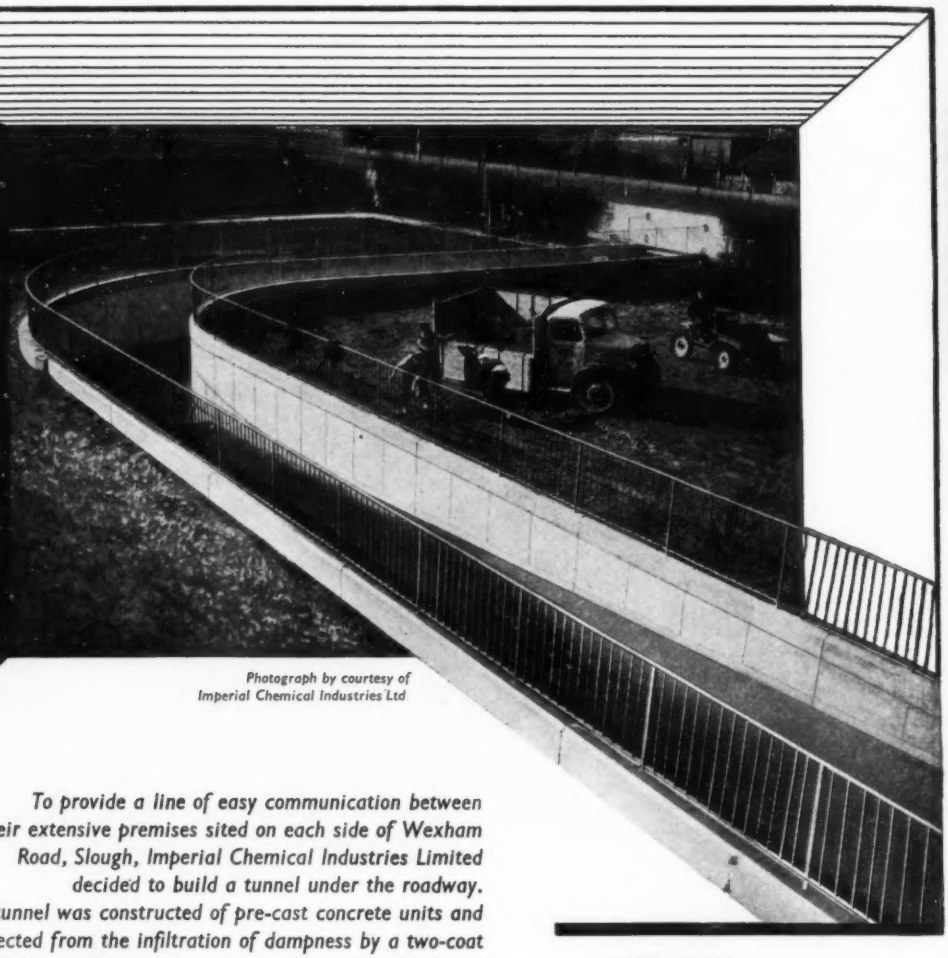
Thermal movement

The low thermal capacity of lightweight structures and the resulting short thermal lag produces temperature changes in panels and framing almost as rapidly and as great as those of the surrounding air. In addition the surface temperature of panels of high absorptivity exposed to direct sunshine may be double that of the air. BRS Digest No. 98 suggests maximum differences of 40 deg. F between night and day temperatures and up to 90 deg. F for differences in extreme temperatures over the year. A difference of 90 deg. F should therefore be regarded as a safe figure for maximum change in air temperature for all locations in this country (0 deg. F to 90 deg. F).

Heat absorbed and confined to outer skins of panels may be expected to be greater than air temperature, especially in dark panels and in panels exposed to direct sunshine. Surface temperatures of 180 deg. F are likely in this country, giving a maximum change of 160 deg. F when a minimum temperature of 20 deg. F is assumed.*

* Variations in surface temperature of panels are usually taken to be much greater in America. The BRI Workshop Conference of October 15-16, 1956, recommended a maximum change of 240 deg. F (−60 deg. F to + 180 deg. F) in the severest conditions.

PUDLO GOES UNDERGROUND



Photograph by courtesy of Imperial Chemical Industries Ltd

To provide a line of easy communication between their extensive premises sited on each side of Wexham Road, Slough, Imperial Chemical Industries Limited decided to build a tunnel under the roadway. The tunnel was constructed of pre-cast concrete units and protected from the infiltration of dampness by a two-coat rendering of three parts sand to one part of cement, mixed with 5% of 'PUDLO' Brand Waterproofing Powder. A two-coat rendering, similarly composed, was applied also to the concrete walls of the tunnel approaches, the approach to one side of the tunnel is shewn in the photograph. The waterproofed rendering ensures freedom from the sodden, dingy appearance that mars ordinary, non-waterproofed work so quickly, when it is saturated by dirt laden rain. The work was carried out by Holland & Hannen and Cubitts Ltd., and designed by the Civil Engineering staff of I.C.I. Ltd.

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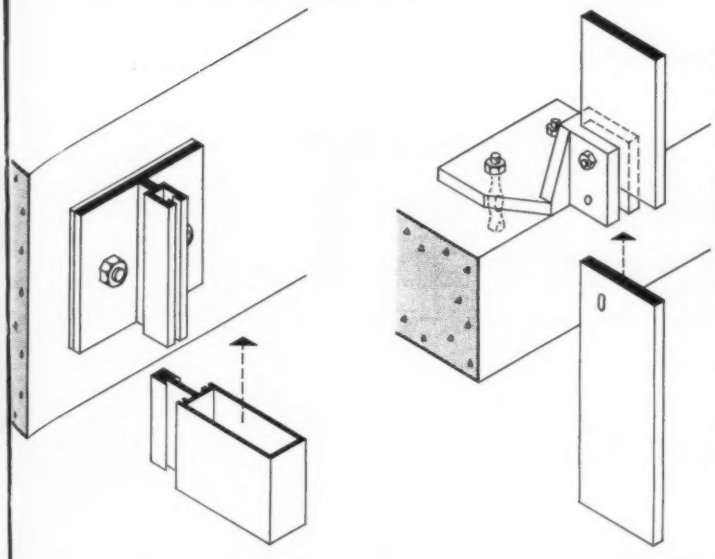


Fig. 1. Allowance for thermal movement between framing and structure. Left, sliding joint (BSC Ltd., Vistalite); right, bolt and slot joint (J. Williams & Sons Ltd.).

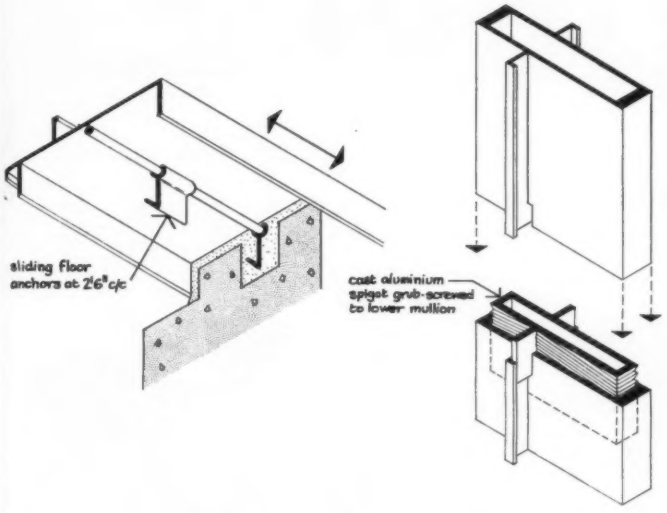


Fig. 2. Allowance for thermal movement. Left, movement between cill and structure; right, movement in mullion (note weathering of spigot). (Williams & Williams Wallspan.)

Internal air temperatures may be expected to be about 68 deg. F in buildings heated continuously, but this temperature may drop to 30 deg. F in intermittently heated buildings. When a radiator is placed near a panel, the ambient temperature may exceed 130 deg. F.

These temperature differentials must be allowed for in the design of the panel, the design of the framing system and the junction of the two, and it is convenient to divide the results of these temperature variations into two parts:

1. Changes in length.
2. Changes in shape.

Assuming a surface temperature change of 160 deg. F, Table 1 gives changes in inches on a 10-ft. length of various unrestrained materials due to direct expansion. While it is unlikely that the wall will attain a uniform temperature at any time, due to partial shading, cooling by the wind of projections, and the varying absorptivity of surfaces, these figures may be used as a guide to the maximum thermal linear movement to be accommodated. Such linear movement in panels is accommodated simply by allowing sufficient edge clearance and the problem then becomes one of joint design.

Table 1. Thermal movement of building materials

Material	Coefficient of expansion per °F × 10-6	Change in inches in 10 ft. 0 in. for 160° F temperature change
Lead	16·2	0·311
Aluminium	13·3	0·255
Stainless steel	9·6	0·184
Porcelain enamel	7·0	0·134
Sandstone	6·1	0·117
Steel	6·0	0·115
Concrete	5·5	0·105
Granite	4·8	0·092
Asbestos cement	4·7	0·090
Glass	4·5	0·086
Limestone	4·44	0·085
Plastics	4·2–21·0	0·08–0·40
Brickwork	3·0	0·058
Timber along grain	1·56–4·7	0·03–0·09
across grain	19·3–37·0	0·37–0·71

Movement in framing systems

In framing systems, differential movement occurs between horizontal and vertical elements and between the system and the structure of the building. Apart from the fact that the frame is more exposed to external temperature and radiation changes, the structure more readily attains a constant temperature, due to its greater thermal capacity. This will be even more pronounced when the insulating skin extends over the structure, or when continuous air conditioning is in operation. If, therefore, the frame is continuous over a number of storeys, the relative movement of frame and structure may be considerable, especially if the framing material is of aluminium.

In order to prevent a cumulative movement throughout the wall, the framing mullions are attached to the structure at frequent intervals and provision (usually sliding spigots) is made to accommodate differential movement of each mullion section. Typical sliding joints are shown in Figs. 1 and 2, and these methods



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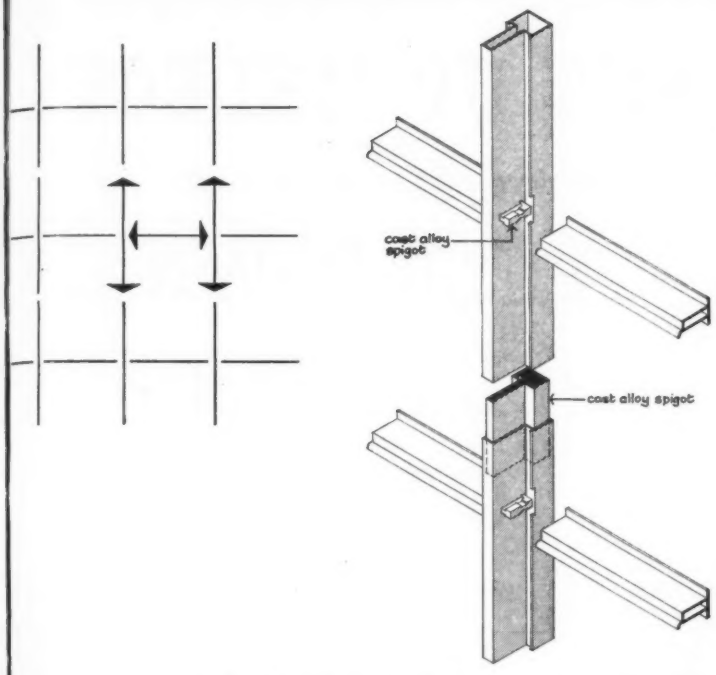


Fig. 3. Thermal movement in metal framing type A. Sliding joints between mullions and transoms. (Templewood Hawksley.)

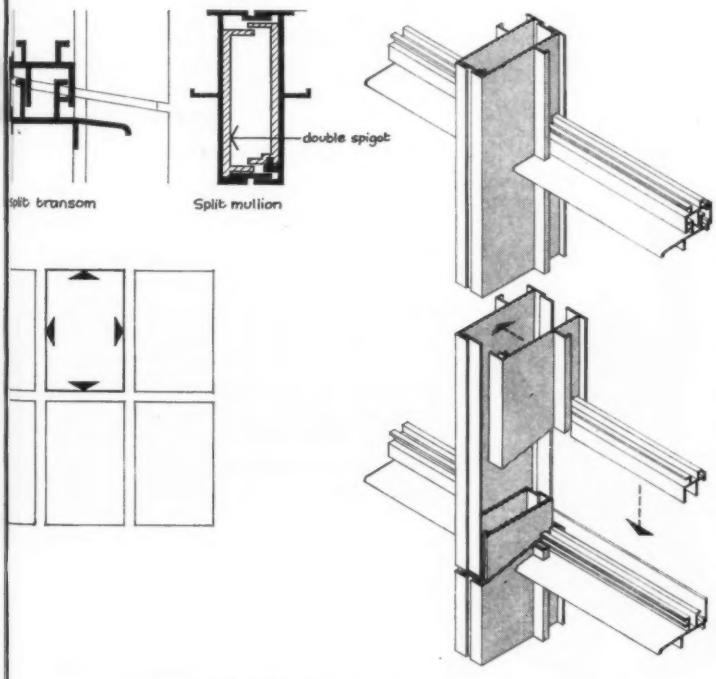


Fig. 4. Thermal movement in metal framing type B. Male and female sliding mullions and transoms. (Holoplast.)

usually combine tolerances for dimensional and alignment variations between shop and site work.

Where bolted connections are made through slots, sufficient freedom to allow thermal movement should be combined with sufficient rigidity adequately to support the wall. Friction at bolted connections may be high between two aluminium surfaces, but may be reduced by the insertion of polytetrafluorethylene (P.t.f.e.) or polyethylene washers. The low frictional component of such washers is largely unaffected by the degree of tightness of the bolt, but care should be taken not to cause extrusion.

The two methods and typical examples of accommodating thermal movement between components of framing systems are shown in Figs. 3 and 4. In Fig. 3 the framing assembly is broken down into short lengths and sleeved connections are used at all junctions. The second method, shown in Fig. 4, allows rather more freedom of panel movement and is especially suitable for preassembled panels. Movement is here accommodated by male and female linear joints on all sides of the panel. A combination of these types is shown in Fig. 5, which allows maximum superficial movement. The edges of the panel framing are here left free to move horizontally or vertically between continuous mullions attached to the structure.

When timber framing is used, thermal movement will be small, owing to the low expansion coefficient of timber. Moisture movement will, however, be present, and this is adequately taken up at traditionally detailed joints. Unless further precautions are taken (see Fig. 6), panel sizes must be restricted to prevent too large edge clearances.

Movement in panels

The second type of thermal movement to be accommodated is a change in the shape of composite panels, and this may be caused by the differential expansion of internal and external surfaces, or by the expansion of trapped air in hermetically sealed panels. A high degree of insulation in panels prevents a uniform distribution of absorbed heat, and the temperature of the external surface may vary from 110 deg. F above to 70 deg. F below normal internal temperatures. When the surfaces are composed of material of high expansion coefficients, such as metal, these temperature differences cause considerable stresses inside the panel. Panel exterior surfaces will become larger than the interior surfaces under hot conditions and smaller when cold. In composite panels unsealed at the edges and corners this stress will be taken up by the core adhesive which must be strong and elastic enough to absorb or transmit movement to a resilient core (Fig. 7*a*). In edge sealed panels, thermal movement is restricted and the warm panel will tend to develop a warped outer face and the cold panel to contract on the outer face causing distortion of the inner skin (Fig. 7*b*). The situation is complicated further by the behaviour of hermetically sealed panels. Dry air contained within a 2-in. thick sealed panel and heated through 100 deg. F will attain



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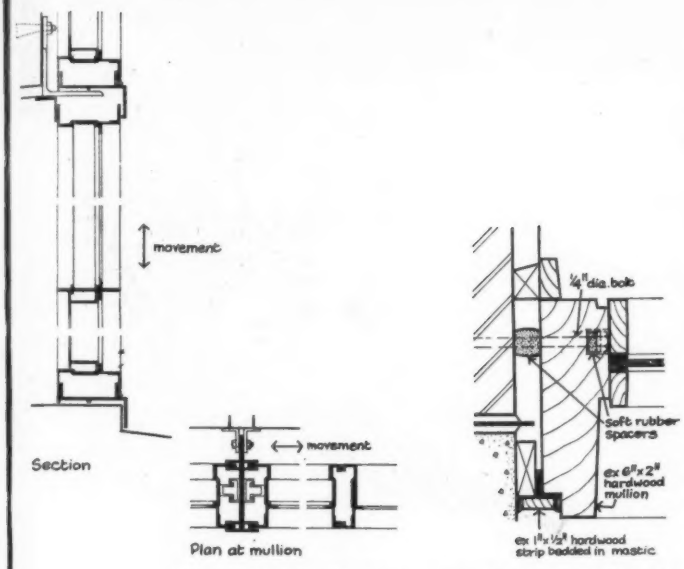


Fig. 5 (left). Thermal movement in metal framing. Composite type. Panel edges left free, allowing free horizontal and vertical movement. (Braby Wallstruct.)

Fig. 6 (right). Allowance for movement in timber framing by means of bolt and rubber pads. (Slough College of Further Education, Bucks. County architect, F. B. Pooley.)

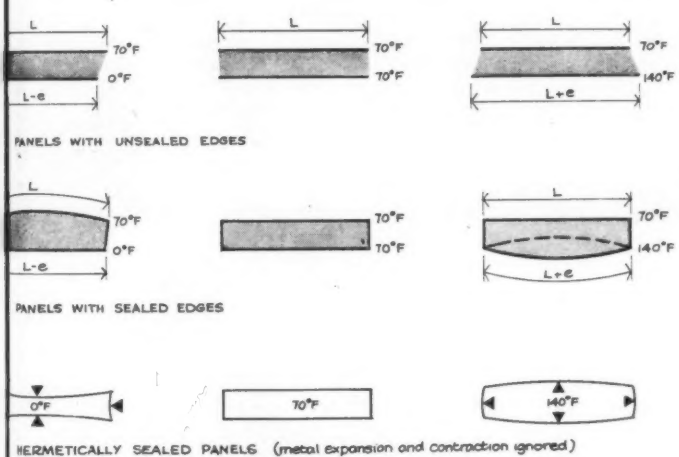


Fig. 7. Variation of panel shape with surface temperature.

a pressure of 490 lb. per sq. ft. and this may be doubled if moisture is present. Bulging on all surfaces and "oil-canning" with accompanying squeaks, creaks and groans may be expected unless adequate precautions are taken (Fig. 7*c*).

Temperature differentials through the panel and consequent dimensional changes are fundamental physical phenomena and distortion of exposed non-metallic surfaces and visible bowing of bi-metallic panels cannot be entirely eliminated, but may be minimized through proper design. If the outer skin is kept separate from the inner insulating layer, deformation in this skin will not be transmitted to the inner surface. Visible deformation in metal outer skins will be negligible if, in addition, the skin is curved, corrugated or dished (Fig. 8). (A useful comparison may be made with the absorption of temperature stresses by curves in ship, car and aeroplane design, none of which employ expansion joints.) Ventilation of the air space will reduce thermal changes even further by reducing the temperature of the external skin exposed to direct sunlight (Fig. 9) and will solve to some degree problems of condensation and heat transmission.

Stress in glass

The effect of temperature changes on glass represents a rather special problem. Unlike other cladding materials, glass is extremely brittle and is unable to accommodate imposed stresses. Particular care must be taken in fixing glass if failures are to be avoided. Because glass has a low thermal expansion coefficient, it is more likely that breakages will occur by the contraction of the frame in cold weather rather than by the expansion of glass in warm weather. This danger will be increased if there are any projections—screw heads, welding fillets—or if the frame is out-of-square. Normal recommended clearances for clear glass given in Table 2 make allowance for such inaccuracies. For opaque and heat-absorbing glass an all-round clearance of $\frac{1}{4}$ in. should be allowed irrespective of size. Not more than two lead or hardwood setting blocks should be used to obtain bottom clearance and to align the glass in the frame and a maximum of $\frac{1}{8}$ in. back clearance between glass and frame and glass and bead should be allowed.

Table 2. All-round glazing clearances in inches (transparent glass only)

Single glazing		Double glazing		
Major dimension	Clearance	Major dimension	¼ in. air space	½ in. air space
30 in. or less	⅛ in.	Less than 48 in.	⅛ in.	¼ in.
Over 30 in.	⅜ in.	48 in. to 72 in.	⅜ in.	
		Over 72 in.	½ in.	

A more serious problem is the presence of internal stresses produced by the differential expansion of the centre of the glass and the edges, which are shaded by the frame or by beads. The stresses will be greater when coloured, opaque or heat-absorbing glasses attain high temperatures. Thomas A. Markus has described this phenomenon in some detail* and suggests that internal stresses reach a maximum when the edge cover is $1\frac{1}{4}$ in. For safe glazing he recommends that a maximum edge cover of $\frac{3}{8}$ in should not be exceeded.

The weakest part of glass is the edge and it is from the edge that cracks will occur. Special attention should therefore be given to edge condition in cutting, storing and fixing and smooth edges, free from shelling, nipping and grazing are to be considered essential. Such defects cannot be avoided when cutting wired glass which should not be subjected to high temperatures unless adequate provision for cooling, such as a ventilated cavity, is used. It should also be noted that a dark coloured frame, by attaining higher temperatures, will reduce the temperature differential between the centre and edges of glass more than a white or polished alu-

* T. A. Markus, "The Glass Curtain Wall, Heat Transmission," Architects' Journal, Vol. 126, p. 783 (November 21, 1957).





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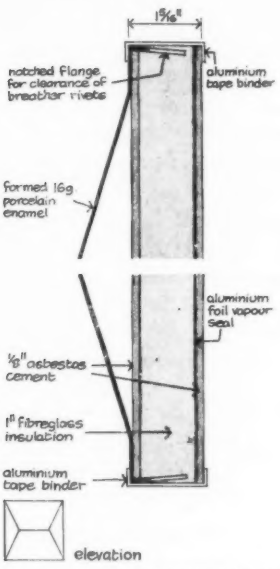


Fig. 8. Deformed outer skin to conceal thermal movement. (Statler Hilton Hotel, Dallas. Architect, William Tabler.)

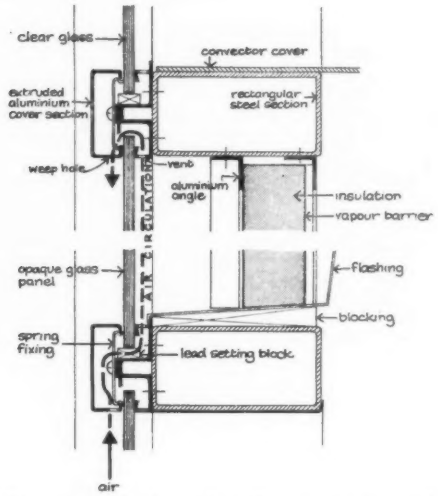


Fig. 9. Reduction of surface temperature of panel by ventilation of cavity.

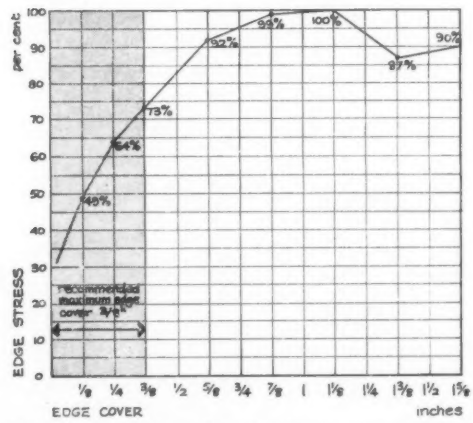


Fig. 10. Variation of tensional edge stress in glass with edge cover indicating the need for minimal edge cover. (From T. A. Markus, "The Glass Curtain Wall.")

minium frame. Because of its edge weakness, wired glass should on no account be coloured.

Moisture movement

Although the dimensions of all materials except metals and glass vary with moisture content, such movement is, with the exception of timber and new asbestos cement, appreciably less than movement due to temperature changes. It is also likely that frequently these movements act in opposition. For example, as the temperature of timber rises, its moisture content will decrease and any thermal expansion will be reduced by a shrinkage due to the lower moisture content. With the majority of materials, therefore, proper allowance for thermal movement will accommodate dimensional changes due to a change in moisture content.

Moisture movement in timber is considerably greater than thermal movement and allowance must be made for movement across the grain; longitudinal movement is negligible. This has been successfully accommodated in the detailing of traditional joinery and presents no special problems. BRS Digest No. 99 gives average figures for moisture movement of timber of 0·2 in. per ft. for external exposure and 0·16 in. per ft. for internal conditions, but these figures will depend to a great extent on the tightness and closeness of joints, especially in boarded panels. Some play should be allowed, especially if the boards are dry or if the movement is expected to be great. Comparative movements for timbers recommended for use in cladding are given in Table 3.

Reversible moisture movement in cured precast concrete is about one-third of thermal movement for 160 deg. F

Table 3. Moisture movement in selected timbers for increase of 30 per cent in humidity (from "The Movement of Timbers," DSIR 1954)

Hardwoods	Tangential inches per foot	Radial inches per foot
Small		
Afrormosia	0·16	0·12
Afzelia	0·12	0·08
Agba	0·22	0·06
Idigbo	0·09	0·06
Iroko	0·12	0·06
Mahogany, African	0·17	0·10
Makore	0·22	0·13
Opepe	0·22	0·11
Teak	0·19	0·12
Medium		
Jarrah, Meranti, Red	0·31	0·22
Niangon	0·30	0·16
Oak, European, Sapele, Seraya, white	0·30	0·18
Utile	0·23	0·19
Large		
Gurjun	0·40	0·24
Yang	0·40	0·24
Softwoods	**Tangential inches per foot**	**Radial inches per foot**
Small		
Cedar, Western red	0·11	0·05
Medium		
Douglas fir, Hemlock, Western	0·33	0·20
Redwood, European, Whitewood, European	0·26	0·12
Pine, Pitch	0·30	0·14

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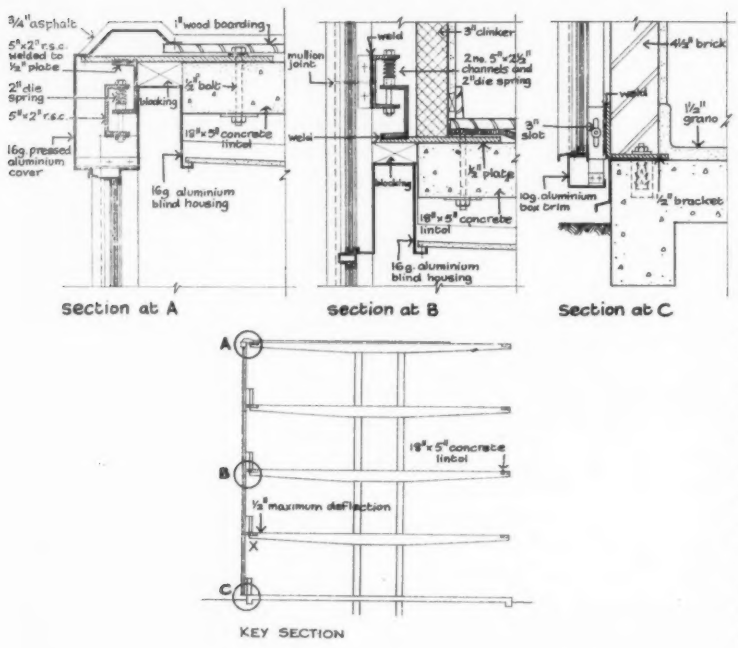


Fig. 11. Spring-loaded joints between cladding and structure to accommodate deflection of structure (College of Further Education, Ystrad Mynach. Architects, Alwyn Lloyd and Gordon. Cladding by J. Williams & Sons Ltd.)

change, but irreversible shrinkage during drying may be double this figure. A minimum curing time of four weeks after manufacture should be sufficient to allow all initial shrinkage to take place.

Structural movement

Relative movement of structure and cladding is not normally large enough to call for more complex junctions than those shown in Fig. 1. Settlement of the structure is generally uniform and no large relative movement takes place, and deflection is small enough to be accommodated in the joints described.

Occasionally severe conditions are experienced and in these cases a special joint is necessary. Such joints were required in the College of Further Education at Ystrad Mynach (architects, Alwyn Lloyd and Gordon) and are illustrated in Fig. 11.

The structure is composed of floor slabs cantilevered on each side of a central row of double columns, and this form was chosen to ensure a uniform settlement over expected mining subsidence, jacks being used to keep the structure upright. Calculated maximum deflection at the edge of floor slabs (X) was ½ in. under full loading but such maximum deflection would be unlikely to occur on all floors at the same time. If it occurred only on (say) the second floor, this floor would no longer give its share of support to the cladding which would then not only be supported solely by the first, third and roof slabs only, but would also acquire serious imposed stresses. It is clear that a rigid or semi-rigid frictional joint could not in this case be used, and a spring-loaded joint was developed (Figs. 11*a*, *b* and *c*) which allows a maximum relative movement of 2 in.

Structural requirements

All cladding is, by definition, non-structural, but it has to possess sufficient strength to be able to support itself between supports and to resist the action of wind and occasional impacts.

Building legislation does not, generally, recognize cladding as a particular type of construction. The Third Schedule of the Model Byelaws, for instance, lays down structural requirements of "external walls," but an "external wall" is not defined. It is, however, implied in Model Byelaw 26(2) that the requirements of the Third Schedule refer only to load-bearing walls. LCC Byelaw 5.24 makes provision for non-load-bearing panel walls "constructed of materials used in combination with a framework of metal or reinforced concrete . . . which do not sustain and transmit any load other than that due to their own weight and to wind pressure on their own surfaces," but the rather severe requirements (8 in. minimum solid wall and 10 in. minimum cavity wall) are applicable only to walls constructed of solid bricks or blocks, concrete or reinforced concrete (5.02). The attachment of any "external cladding" to the structure must be with "stainless steel or non-ferrous metal other than aluminium or zinc" (3.21(2)).

Wind pressure is by far the most severe force acting on cladding, and it has been found that generally a non-load-bearing wall designed to resist wind load will have adequate strength to resist other forces. Unfortunately, the subject of wind loading on buildings is extremely complicated and knowledge is limited. Complications arise because of the large number of variables which have to be taken into account in any quantitative assessment of wind pressure. These include the size and shape of the building and its openings, air temperature, relative humidity and barometric pressure. Most important of all, the frictional resistance to air near the ground reduces its velocity, which thus varies with the height of the building up to about 200 ft.

The most useful treatment of the subject of wind loading to the architect is the BS Code of Practice CP3—Chapter V (1952) and Amendment No. 1 (February, 1958). The Code gives values for basic wind pressures for various exposure ratings and describes the conversion of the basic pressure into loading forces.

It is not difficult to design cladding to withstand a wind load of as much as 30 lb. per sq. ft. and it is unlikely that this value will often be exceeded in this country. A sheet of ¼-in. plate glass 4 ft. × 5 ft. will, for example, take such a load. Of equal importance is the attainment of sufficient rigidity to prevent damage to internal finishes and joints by repeated bowing or vibration of panels.

Fastenings and fixing components should be capable of resisting the total wind load of the panel they support. To avoid overload and progressive failure of fixing components, it is advisable to design the means of attachment so that two-thirds of the fixing components used to support the panel are able to withstand the total wind load.

OFFICES

PEMBROKE HOUSE, CITY ROAD, LONDON, E.C.1

designed by MORRIS DE METZ

quantity surveyors H. R. HEASMAN AND PARTNERS who prepared this cost analysis

consultants, engineering J. H. COOMBS AND PARTNERS

SfB File No. (92)

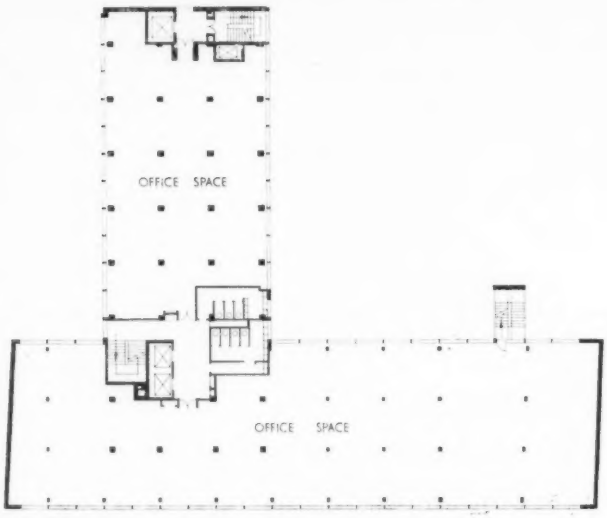
UDC No. 725·33

Pembroke House is a twelve-storey office block in the City Road, overlooking Bunhill Fields and John Wesley's chapel and statue. Its publication is given greatly increased interest since costs have been made available, an exceptional decision in the case of buildings designed for letting, and it is the first building to be cost analysed in accordance with our revised form (published AJ January 7).

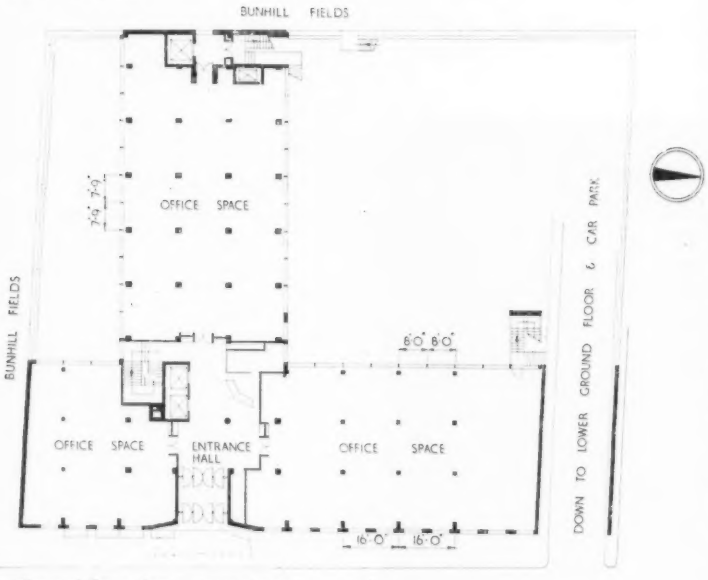


Besides the glazing, four different facing materials can be seen in this view: artificial stone, exposed aggregate (spandrels of tall block), vitreous mosaic (spandrels of low block) and polished marble (ground floor of low block).

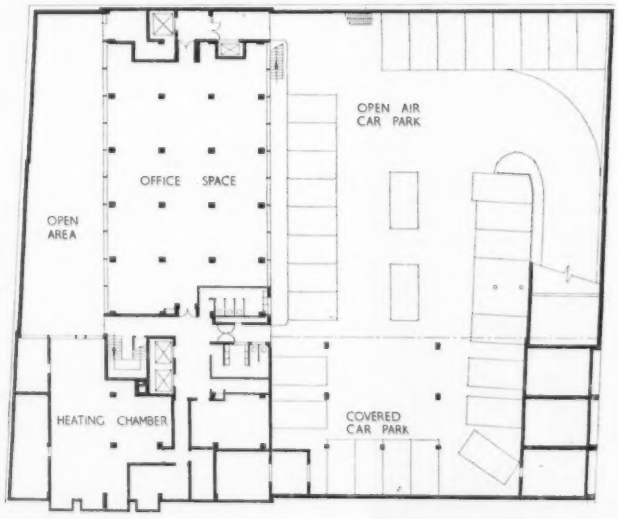
building illustrated



First floor plan



Ground floor plan CITY ROAD



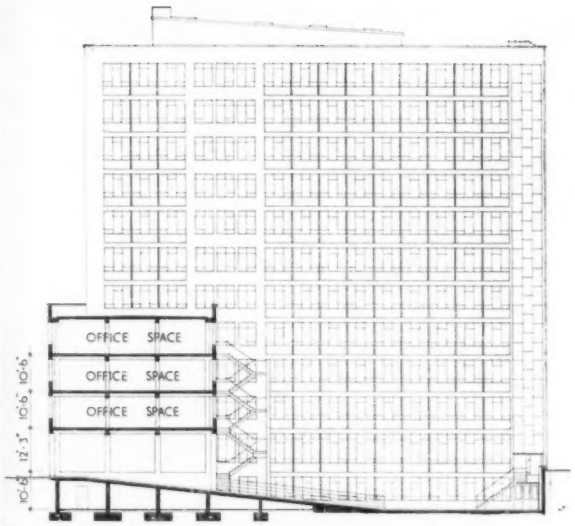
Lower ground floor plan [Scale: 1/8" = 1' 0"]

APPRAISAL : Pembroke House is one of the better blocks of office buildings, and less offensive than most of its recently built companions in the E.C. district. Its chief interest apart from this, is that it provides fairly full cost data for what might be regarded as the basic building requirements for any sedentary occupation, i.e., a weatherproof, durable, reasonably insulated envelope, with internal finishes and services suitable for adequate, if not luxurious, standards of creature comfort. Wherever similar density and site conditions apply, to get the same standards for less money would demand even greater ingenuity or harder thinking.

As with all office blocks built as a speculative investment, the architect's main task is relatively simple to define: to get as much lettable office space on to the site as town planning requirements will permit, and to get it ready for occupation as soon as possible without allowing speed to bump the cost up higher than will allow the investor to get the return he is hoping for. This means getting out sketch designs for town planning submission, and just sufficient tender drawings to enable building to start the moment, almost, that town planning approval is received. Thereafter the architect is under great pressure to supply the contractor with details as the work proceeds and in this case he worked with a very small staff. In such circumstances architectural values could very well suffer, but the fact remains that if architects refuse to work under such conditions, there are still plenty of wolves around who will happily take their place and certainly do a much worse job. This is something to be remembered when critical judgments are made in the course of this article.

Four principal conditions controlled the massing of the building: plot ratios, angles of light, car park requirements and the general town planning aim to confine the frontages along this stretch of City Road to four storeys above street level. A typical London site enabled an extra floor and the car park to be placed below street level. The cost figures include for the retaining wall and tanking round the area thus involved.

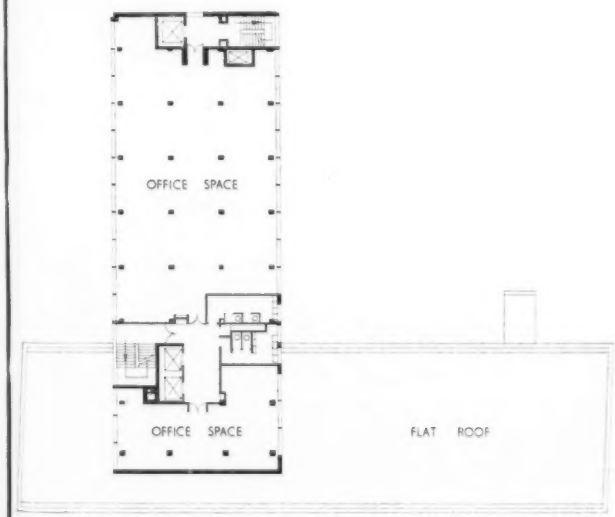
The total floor area within the external walls of the resulting masses is 97,300 sq. ft. (excluding the external fire escape). The lettable floor area accounts for 78 per cent of this. Since the lettable area had to be the maximum reasonably obtainable, it can be assumed that the balance of 22 per cent is virtually the minimum an architect must expect to devote, in a building of this kind, to essential ancillary accommodation. This includes all vertical and horizontal circulation, partition thicknesses, lavatories and cloakrooms, cleaners' cupboards and stores, boilerhouse and fuel store, transformer chamber, etc. If the tank store of the roof is also taken into the calculations, the gross area increases to 98,358 sq. ft., of which lettable area then accounts for 77 per cent, and the balance for 23 per cent. Individual tenants may divide lettable area as they wish. If the whole area between escapes is used by only one organisation there is no fire requirement for a central corridor, but should this be necessary, either because tenant organisation demands it or because two tenants divide the space between them, then five-foot wide corridors throughout would be needed, and would alter the percentages to about 68½ and 31½. In any building where there were more partitions, or where there was a need for, say, locker rooms, or a heavy burden of



Cross section through 4-storey block [Scale: $\frac{1}{16}$" = 1' 0"]



Tenth floor plan

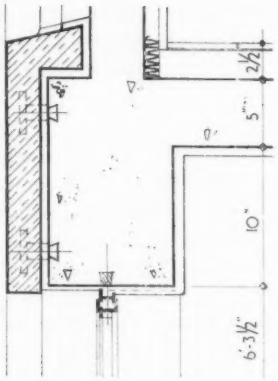


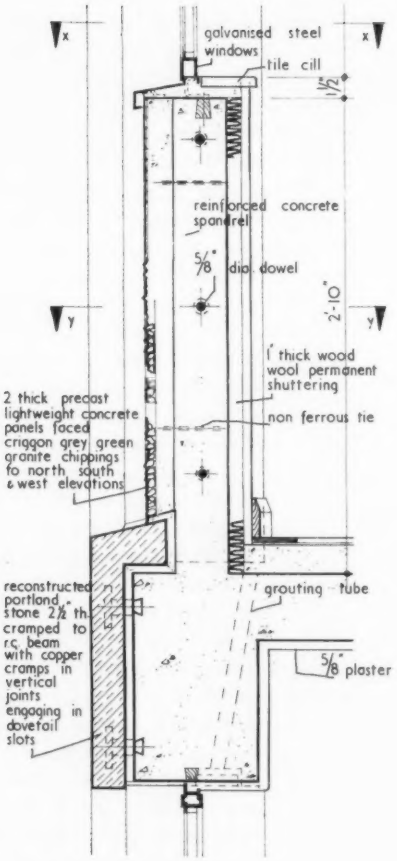
Fourth floor plan

services demanding vertical ducts, the balance would have to be correspondingly increased. In this connection, it must be said that, while the public areas in this building are in no way poky, there is no great air of spaciousness about them. This example therefore provides a useful indication of what could be regarded as economical planning in a variety of building types. There would probably be no significant variation in the percentages if the building were a few storeys lower so long as alternative means of escape were still required. That this is so may be confirmed by the fact that the inclusion of the external fire stair in the gross area alters the percentage by less than 1. A further useful indication of what should be allowed in planning is the fact that the boilerhouse and fuel store account for 1·4 per cent of the gross area. There is enough free space in the boilerhouse to suggest that such a percentage is in no way cramping. The main heating, electrical and water services are run vertically in ducts through the lavatories, while heating distribution pipes are exposed in office areas. The detail and construction of the building suggests that the hectic conditions of production have prevented any very close integration between the major constructional elements. The columns, for instance, are kept away from the window wall, and as always with such a device, there arises the awkward problem of filling the resulting gap where a partition occurs. Here plastered blockwork has been used as a filler, with the almost unavoidable shrinkage crack where it meets the mullion. In view of such difficulties one might suppose that the idea may have been half-prompted by the anxiety to proceed with fenestration details before final column sizes had been determined. The consequent saving in time was probably sufficient compensation for the obstruction of office space caused by the recessed columns, and it must be admitted that in practice such obstruction does not seem to have caused any very great inconvenience. Nevertheless, since this was the solution chosen, one wonders if the non-structural concrete mullions can still be justified. These are extremely slender compared with the scale of the building as a whole. Horizontal hair cracks have appeared in many of them—nothing to cause anxiety—and the explanation advanced is differential movement caused by temperature differences between the interior face of the mullion and the exposed outer face.

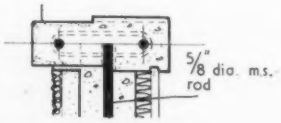
From the point of view solely of appearance, however, these mullions, together with the glazing divisions, produce a marked vertical emphasis which conflicts with the horizontal lines of the floor slabs to give a somewhat indeterminate result. A happier solution might possibly have lain in leaving the spandrel uninterrupted and finishing the mullion at sill level, although problems of expansion might then have presented themselves. External appearance cannot, unfortunately, be assessed with much precision in financial terms. The date when rents can be collected can. This perhaps explains the choice of the external materials: the simple precept of variety and contrast in form, colour and texture has been followed demonstrably enough, but without sophistication. The facing materials look as though they might have been chosen to grade the importance of the elevations—marble and vitreous mosaic for the front, artificial stone for the sides, and plain brick round at the back. In addition exposed aggregate panels are used under

building illustrated





Typical section through external walls ground to tenth floors
[Scale: ½" FS]



Half-plans through spandrel and mullion at x-x and y-y

all but the front windows. Plenty of variety but rather less than enough discipline. Nevertheless, it cannot be said that any of the external finishes look the least bit skimped, and this is creditable in a building twelve storeys high, built for less than 72s. 0d. a square foot.

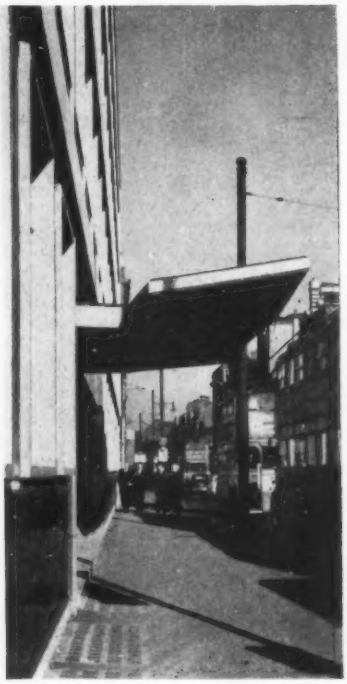
Internal finishes are less satisfying. The hardwood floors certainly represent a higher standard than the thermoplastic found in many office blocks (has anyone found an answer to the problem of stiletto heels?), but there is no sound absorbent, walls are finished in hard plaster throughout and are vulnerable to grease marks where people brush or lean against them. The woodwork generally is rather austere and less substantial than is usually associated with this class of building.

Presumably, however, this was as the clients wished, and it may be argued that the more frequent maintenance involved could be less costly than the extra capital plus interest needed for anything more durable. Otherwise some contribution could have been found for better internal finishes by a reduction in the amount spent outside, had that been an acceptable course to take (see Cost Comments). It is worth noting in this connection that the steel fireproof shutters are now no longer a fire requirement. Had this relaxation been introduced in time, over £1,500 would have become available for improving finishes in crucial places.

In a building of this kind, the architect's difficulties are intensified if tenants are found before it is complete, as modifications are then frequently asked for. In this case, one tenant took over the whole of the fourth to tenth floors of the tall block, and decided to devote the top floor, not to office space, but to a cafeteria. (The cafeteria is, however treated as office space in the area analysis at the beginning of this article.) The decision involved the introduction, during the course of erection, of a service lift and extra heating and hot water services, with attendant complications that can be imagined. (These variations are likewise excluded from the cost analysis, which is based on the original tender.)

It may be of interest to note that the area of the canteen is 13½ sq. ft. per seat, and the kitchen, serving a peak capacity of 250 lunches a day, works out at 6·86 sq. ft. per meal. This includes servery, stores, lift and staff changing room. This space allocation is about normal in catering establishments. For the purpose of calculating lift and staircase loads, the building is reckoned to hold one person to every 100 sq. ft. Much has been said in the past ten years of the economies in both erection time and final cost that must result if a building is designed and completely detailed before the contract is let. This has invariably been accompanied by a plea for adequate time to prepare full contract drawings and for the avoidance of variation orders once the building has begun. In a speculative office building of this kind, however, where site values alone are enormous, the capital tied up in them must produce the earliest possible return. Equally, because of tenants' demands, variations, and substantial variations at that, are unavoidable. Yet here is a building completed at a very reasonable cost, representing good value for money, and erected in 18 months. Does it suggest a need to review the case for pre-planning?

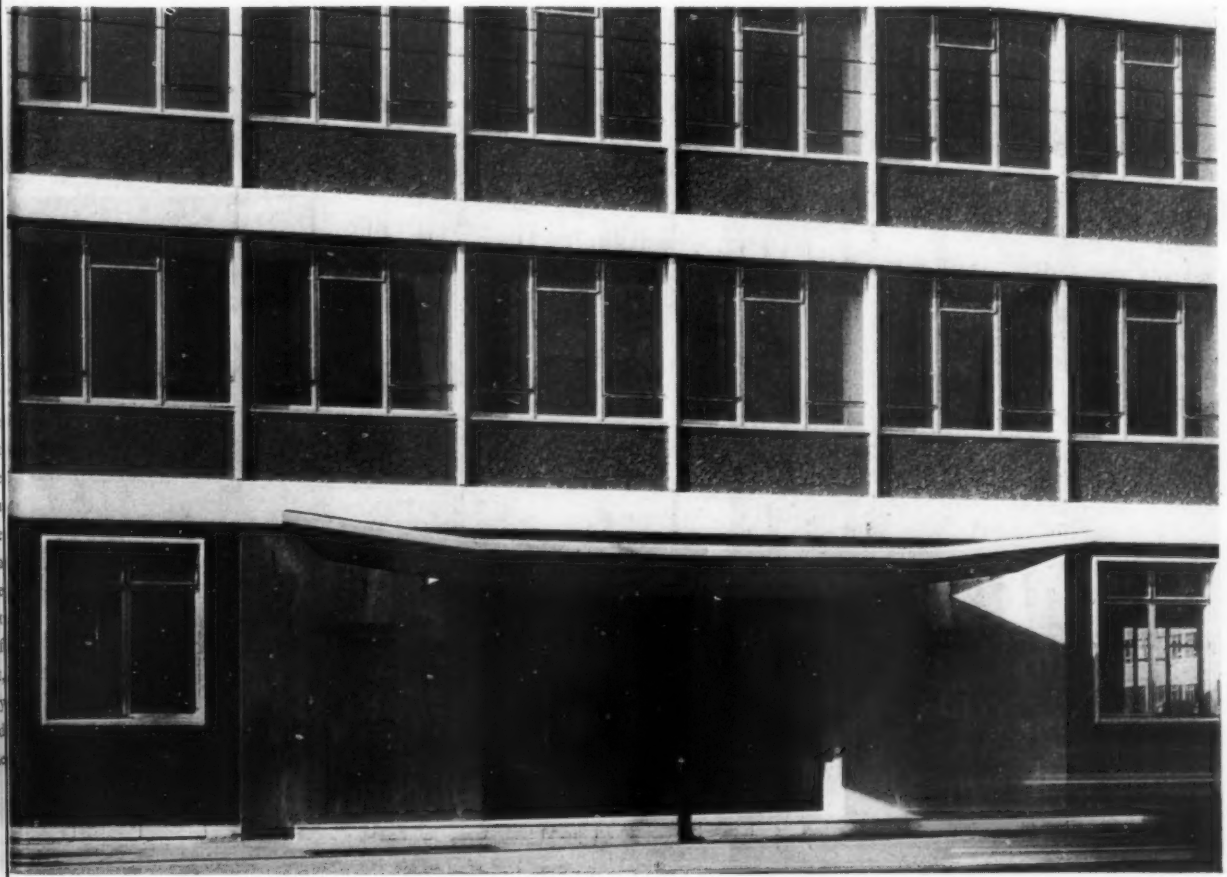


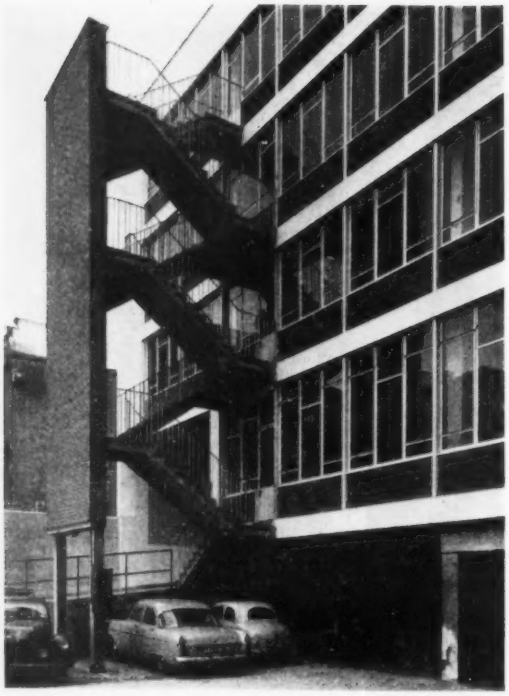


Here a fifth facing material is used, the brickwork round at the back, at the end elevation of the tall block (above).

Flanking the main entrance is yet a sixth material, serpiaggente marble, contrasting with the dark green verde freye on either side of it (below).

The entrance canopy looks well enough when it is seen in elevation but has a curiously distorted appearance as one comes alongside (above).



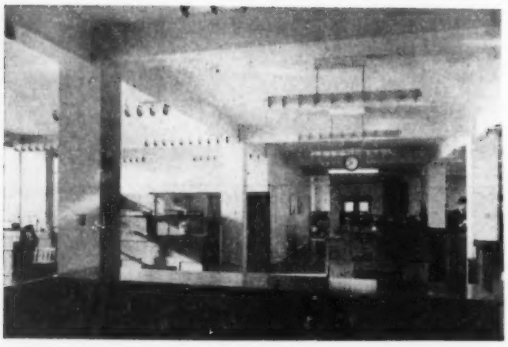


building illustrated

Top left, the external fire escape.

If the lettable area between fire escapes is used by only one tenant organisation there is no fire requirement for a central corridor. The view centre left is taken from the south lift hall and beyond the clock can be seen the doors to the north staircase. All partitions, light fittings and furniture are to the tenants' requirements.

Below, doors from stairs to lift hall. Woodwork generally is more austere and less substantial than one usually associates with this type of building.









Above, the boilerhouse and fuel store account for 1·4 per cent of the gross area. There is enough free space to suggest that such an area is in no way cramping.

Left, general view of the main staircase.

analysis

CLIENT'S REQUIREMENTS

The principal requirement was an economical building with adequate services, to provide the maximum lettable office space.

PLANNING AIMS

Owing to the open nature of the site the building was considered as a three-dimensional composition, and from this, and the necessity to comply with LCC daylighting requirements, a T-form block emerged. The elevational treatment was designed with a two-fold purpose: firstly to " break up " the large surface areas resulting from one-type occupation, and secondly to allow for the easy sub-division of the office spaces. To provide good natural light to all offices a block width of 48 ft. was decided upon.

SUMMARY

Ground floor area: 11,100 sq. ft.
Total floor area: 97,300 sq. ft.
Type of contract: RIBA.
Tender date: July, 1957.
Work began: November, 1957.
Work finished: February, 1959.
Tender price of foundations, superstructure, installations, and finishes: £348,500.
Tender price of external works including drainage: £10,250.
Total: £358,750.

cost per sq. ft.	s	d
Preliminaries and insurances	6	3¾
Includes for tower crane. Fixed price contract.		
Contingencies	2	0¾
Work below lowest floor finish	3	9¾

The site contained existing basements and a road running across it.
The basements provided the lower ground floor and car park area with a minimum of excavation.

STRUCTURAL ELEMENTS

	s	d
Frame	8	5½
Reinforced in situ concrete columns and beams. Approximately 16 ft. grid.		
Upper floors and roof	6	6
Reinforced in situ concrete. Superloads, 50 and 20 lb. per sq. ft.		
Roof is asphalt on foamed slag concrete screed. Area, 11,700 sq. ft.		6
Rooflights		¼
Precast concrete rooflights. Total area, 100 sq. ft.		
Staircases		7
2 internal and 1 external reinforced concrete in situ. Width 4 ft. Total rise: internal stairs, 127 ft.; external stairs, 44 ft.		
External walls	9	9¾
In situ concrete walls under windows backed with woodwool faced with exposed aggregate precast concrete slabs.		
Brick walls faced with reconstructed Portland stone.		
Vitreous glass mosaic faced with precast concrete slabs to City Road elevation.		
Marble facing at street level.		
Reconstructed Portland stone mullions, window jambs, heads, etc.		
Ratio: $\frac{\text{solid wall}}{\text{floor area}} = \frac{0{\cdot}50}{1}$		
Retaining walls to basement rooms		6
Windows (includes glazing)	4	3
Metal purpose made casements.		
Clear sheet glass generally		
Obscured glass to lavatories. Fire resisting glass.		
Ratio: $\frac{\text{windows}}{\text{floor area}} = \frac{0{\cdot}23}{1}$		
External doors		1
Teak entrance doors and screen.		
Internal structural walls	1	0
Brick and *in situ* concrete walls to stairs and liftwells		
Partitions		
Hollow tile blocks, 825 sq. yds.		2¼
Plywood w.c. partitions, 350 sq. yds.		3¾
Steel fire shutters		4
14 shutters with fusible link.		
Internal doors		7¾
Flush doors, with ½-hour and 1-hour fire resistance, No. of single, 72. Pairs of double, 90		
2 pairs of teak glazed doors.		
Ironmongery		5½
Satin nickel bronze.		
Overhead door closers to double doors.		

Total of structural elements: 33s 7¼d

FINISHES

	s	d
Wall finishes	1	4¼
Plaster generally.		
Wall tiling to dados in lavatories.		
Floor finishes	5	4½

Type of finish	*Area in sq. yds.*	*Price per sq. yd.* s	d
Wood block	8,900	30	6
Terrazzo	550	45	0
Thermoplastic	450	14	0
Granolithic	640	16	0

Skirtings.

Ceiling finishes		6
Plaster.		
Decorations	1	0½
Emulsion paint on walls and ceilings.		
Hard gloss on wood and metal surfaces.		

Total of finishes: 9s 3¼d

FITTINGS

Fittings	1	10
Reception counter. Lightning conductor. Balustrades.		
Cat ladder. Steel doors. Ventilation ducts.		
Incinerator flues. Lettering. GPO telephones.		

analysis

		s	d
Sanitary fittings			3¾
Type of fitting	*No. of each type*		
Cleaners sinks	10		
Lavatory basins	82		
Low level w.c.s	54		
Urinals: 2-stall	1		
3-stall	10		
Total of fittings: 2s 1¾d			

SERVICES

Cold water service		2	0¾
Copper plumbing.			
Wet and dry risers and hose reels.			
Cast iron soil and waste pipes.			
Cast iron rain water pipes.			
Hot water service		3	11½
2 oil-fired boilers with electrically driven pumps to radiators.			
1 oil-fired boiler for hot water.			
Internal temperatures: offices, 65 deg. F; lavatories, 55 deg. F; with external temperatures of 30 deg. F.			
Air change: 2 per hour.			
Generally, one 4-column, 16-section, 22-in. radiator is provided to every 7 ft. 9 in. window bay.			
Electrical services		2	0½
Type of fitting	*No. of each type*		
Light fittings	1,162		
Switches	649		
13-amp power	313		
Incinerators	11		
Clocks	1		
There are generally 4 ceiling outlets to each 16 sq. ft. bay.			
Special services		5	9¼
Lifts: 2 gearless electric 13-passenger lifts (500 f.p.m.) with full collective control.			
1 electric 20-passenger/goods lift to carry 3,000 lb. (300 f.p.m.) with fireman's master control.			
Total of services: 13s 10d			
Drainage			6½
Cast iron under building: stoneware elsewhere.			
Net cost, excluding external works and drainage: £348,500			
97,300 sq. ft.		71	7½

COST COMMENTS

Office blocks comparable with this building have rarely been cost analysed in the AJ (two that are comparable were Chiswell Street, AJ, June 21, 1956, and the Dock Labour Board offices, October 18, 1956), since most developers show a marked reluctance to disclose such details.

In the case of exceptions like the building published this week, the building owners and their architects and quantity surveyors deserve special thanks for making the information available.

Because of the dearth of information, a cost assessment of this building must depend on comparisons made with buildings outside the office field. The cost of the structure here, including all foundations, finishes and a proportion of preliminaries is 52s. 11d. This compares with the schools analysed in the AJ for which the cost of comparable items ranges from 40s. to 57s. 6d. The Pembroke House service costs are 16s. 0¼d. compared with schools ranging from 11s. to 18s. Yet most schools are built on much less awkward sites, are usually only two or three storeys at the most, and never have anything like the lift provision found here. In short, the cost level of this building is about the same as that of schools built within strict cost limits.

It is interesting to examine what additional money would have to be spent if the building were more fully partitioned. If it were required to provide rooms of between 300 and 400 sq. ft. on each side of a 5 ft. wide central corridor, an extra expenditure of about 3s. 8d. per sq. ft. would be required. This is made up of the following extras:

Partitions	1s. 0d.
Doors	1s. 0d.
Wall finishes	7d.
Floor finishes (extra cutting)	3d.
Decorations	10d.
Total extras	3s. 8d.

This assumes the use of similar block partitions to those already in the building: more elaborate demountable or glazed partitions might increase the cost of the partitions alone to about 6s. per sq. ft.

Since tenants frequently wish to make fairly substantial alterations within the areas they rent, the decision to spend most of the available resources on external appearance (for which the tenants have no responsibility) can readily be understood. If, however, it had been desirable to raise the quality of internal finishes without increasing overall costs (as might have been the case in a building for an owner occupier) money might have been made available in the following way: In round figures, the vitreous mosaic panels cost £8 0s. 0d. per sq. yd., whereas the exposed aggregate panels cost only £4 12s. 6d.; but the areas of mosaic was only 125 sq. yds. and had the cheaper panels been substituted for it, the resultant saving would have been only £422 10s. 0d. However, the p.c. for marble facings on the street frontage worked out at just over £21 0s. 0d. per sq. yd. of wall. Had *this* been replaced by the *mosaic* a saving of about £2,000 would have become available. The total saving of £2,422 0s. 0d. might have been used to provide some kind of superior lining in the main stair and lift lobbies. A dado 7 ft. high in these places on each of the twelve floors would have needed 5,040 sq. ft. of lining on which nearly 10s. per sq. ft. could then have been spent. After that it would have become increasingly difficult to find savings externally to improve internal finishes, and had a suspended acoustic ceiling been required (at about 45s. per sq. yd.) the overall cost of the building would then have had to be raised by 3s. 6d. per sq. ft. (ceiling finishes as built having already accounted for 1s. 6d.).

The cost of preliminaries and contingencies in the three office projects now analysed lie between 11·1 and 13·24 per cent of the cost of the complete job. For schools the average is about 7 per cent and is very frequently below 5 per cent. Is this a reflection of the uncertainties involved in building both on difficult sites and from drawings which are probably much less completely detailed at tender stage?

CONTRACTORS

General contractors: Sir Robert McAlpine & Sons. *Lifts:* J. & E. Hall Ltd. *Windows:* Crittall Mfg. Co. Ltd. *Asphalt:* Val de Travers. *Terrazzo:* Marriot & Price Ltd. *Electrical:* Phoenix Electric Co. *Ventilation ducts:* Anderson Construction Co. Ltd. *Marble:* Marmi (England) Ltd. *Mosaic panels:* Marriott & Price Ltd. *Exposed aggregate panels and floor screeds:* Cheecol Processes Ltd. *Facing bricks:* W. T. Lamb & Sons Ltd. *Balustrades:* Gardiner, Sons & Co. Ltd. *Floor tiles:* Marley Tile Co. Ltd.; Horsley, Smith & Co. *Paints:* Hadfields Ltd. *Light fittings:* Ekco Ensign Electric; GEC. *Sanitary fittings:* Stitsons Sanitary Fittings. *Door furniture:* Yannedis & Co. Ltd. *Fire-proof shutters:* Fire Proof Shutter & Door Co. *W.c. partitions:* Venesta Ltd. *Lightning conductors:* J. W. Gray & Son Ltd. *Rooflights and pavement lights:* J. A. King & Co. Ltd.



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BASA

Monthly supplement

The BASA Editors
The Building Centre
Store Street
London, W.C.1

BASIC NEEDS

When we commenced our five years' course in architecture, we hoped by the end of our training to have some competence in design and an adequate knowledge of building techniques. This is probably the minimum goal we set for ourselves. But while in the process of achieving even this minimum goal, many of us do not realise we are learning and perfecting two elaborate and difficult systems of communication—one employing project plans, perspectives and models to suit the client; and the other employing complex working drawings to suit the contractor.

Unfortunately, undue stress is placed on these two systems of communication to the detriment of the more normal means of making oneself understood—namely, by writing and speech. The Welsh School of Architecture's report of its investigation into the current state of architectural education in this country mentions this problem. Is it any wonder that architects seem to have a reputation for being inept at expressing themselves clearly and concisely after receiving little, if any, practice in public speaking or disciplined writing while at their schools of architecture?

Bar the experience of making notes on drawings, scrawling rapid answers to examinations once a year, or taking illegible notes in lectures, many of us will complete our courses and take our places in the profession with less proficiency in writing, owing to lack of practice, than when we left secondary school. The same goes for public speaking. The idea that we should explain our drawings briefly during crits has much to commend it for this would provide some training in presenting our views in public in an accurate and persuasive manner. After all, this is an essential part of professional practice. It is in our interest to pursue opportunities for remedying these deficiencies: effectively used, writing and speech are of inestimable value, even to the architect.

STUDENT'S VIEW

The **BASA Executive** met on Saturday, February 20. Almost all the members turned up to a lively discussion on methods of implementing the resolutions passed during the Bristol Conference. Particular attention was paid to setting up research teams. The executive thought that a team to investigate architectural education should be established with great urgency. They acknowledged the survey by the Welsh School of Architecture with much appreciation, but consider a fact-finding team has still much ground to cover in this field. Negotiations are going ahead with the RIBA to get their help with the implementation of the resolutions and to co-ordinate research projects. A full report of this executive meeting will appear in next month's BASA supplement.

The Report of the Bristol Conference has been sent out to all the schools, and based on this and on the shortened version which appeared in this supplement last month, the **Edinburgh, Leicester, Liverpool** and **Nottingham** schools have already held local meetings to discuss its conclusions. The executive expect other schools to follow suit. This is the only way individual members have a chance to hear what went on at first hand from their BASA rep. and to express their reactions; and these, of course, will form some of the raw material for the next national conference. An interchange between the executive and the grass roots is vital to the strength of the association.

This year **Leicester** started a magazine. The first issue was due to be published in the first week of this term. I have not seen it yet, but if it has found its way into print, this means that two architectural schools have their own journal, counting the AA.

The **Cardiff School** has succeeded in arranging joint meetings with local practising members of the profession. Each session, a series of six lectures financed and organised by the Double Elephant Club is arranged. This club is the cultural society of the South Wales Institute of Architects, of which all the students of the school are members. Other schools take note!

The BASA Diary indicates that **Liverpool** is sponsoring a lecture by a Dr. Gore. Dr. Gore, so David Ackerman writes, is a psychiatrist who held a post at the Rainhill Mental Hospital and is interested in painting and sculpture. He also lectured at the Liverpool Art School. It is good to hear that one society is broadening the selection of its lecturers to include speakers who are not necessarily architects.

Liverpool has changed its regular Friday afternoon lecture to the evening. I should like to know how successful this is. Do more students attend? And are lecturers from afar reluctant to come as they must now stay the night? Last month, Baden Hallard gave one of these evening lectures which he titled "Communications." He suggested the architect should consider himself in a role similar to a managing director of an industrial enterprise.

He stressed the importance of an efficient office, the planning of time and the analysis of cost. Above all, he saw the architect as the nerve centre of a system of communications.

Nottingham had a visit from their immediate past-president, J. Gordon Woolatt, now qualified and out in the big, bad world. In a lecture, he unequivocally told his audience that it mattered little to him how and what he designed so long as he pleased his client. Unmoved, the society informed their guest that he should remember his social responsibility as well as that to his client. No doubt the students showed him a new twenty foot geodesic dome that they have just made as an example of what they meant.

In January, more than 70 students of the **Northern Poly** visited the new extension of the **Cambridge School of Architecture** and other recent buildings in the town. Colin St. John Wilson and some of his students acted as guides throughout the day and helped in many ways to make the visit go well.

The **RWA School of Architecture at Bristol** in looking back on last term's activities, have singled out three lectures for special mention. Noel Moffet's on "Mexico," which he described as the American Greece and illustrated with impressive coloured slides of sculpture and architecture including the work of Candela. James Gowan's on recent work by his firm; this naturally led up (or down) to a discussion on "new brutalism." And Bill Howell's on the scheme his firm submitted for the Churchill College Competition.

STUDENT

LETTERS TO THE BASA EDITORS

ICAS

SIR: During August last year, I visited Hanover for the VI International Congress of Architectural Students, as the representative of the Nottingham School of Architecture. I was the sole British student there. An international competition arranged previously was judged during the period of the Congress. Only two projects were submitted from Britain.

I feel these international meetings are important. I admit that some of the students there are fired by national patriotism instead of international humanism, but nevertheless new points of interest do arise which require immediate and thorough investigation. A rather disappointing report on student housing given at the Hanover Congress was published in the last December issue of the German magazine *Bauwelt*. Disappointing because it explains how satisfying it is for students to look out on to nice white walls, but it fails to mention the basis of a student's life.

The next Congress is to be held in Mexico City in 1961. This will be a brilliantly colourful occasion well worth a visit.

DAVID BRINDLE

Nottingham School of Architecture

Specially for Us?

SIR: Being one of the BASA boys so bitterly harangued by Reyner Banham for their conspicuous absence from the Portland Place space travelogue, I realized guiltily that 'RIBA President's Address to Students: Criticism by Phillip Powell of Work Submitted for Prizes and Studentships," was one scene that I had got to dig. Not of course that I had Submitted Work, simply that here surely would be answers to many of the problems, confusions, doubts, misunderstandings and soul-searchery that beset the peculiar education for this peculiar profession; all those worries about what are we doing and why, and how does it relate to the problems of society and the way they are now being solved or are not, whither, in fact, the profession and whither the industry? So here, I thought, is our own President setting aside his troubles to explain to we poor students why and how and where we and he and the Institute are going, and with a specially appointed Critic to tell us all about the relevance of those bloody weird Prizes.

I saw the evening then as a (in fact the only) specifically appointed occasion for liaison between the established profession and the students, and as a time for serious reappraisal and communication. How naive. Because oh-ho no they weren't going to let us in on a thing, not one thing; like it's all fine and dandy but no one's telling. A benign Basil Spence "improved the occasion by refusing to deliver the customary presidential address," and "the poor man's Hugh Casson did his crit . . . with more kindly humour than some of his predecessors." And with obvious reluctance. The usual people then spent the usual time thanking everybody for everything, and the brass made a swift exit. Thanks.

The only result of the formalities being that ASTRAGAL ". . . was reminded how much a reform is needed in this prize system," and asked for suggestions. Well. The whole thing is staggering. Suggestions! It would need the setting-up of a fair-sized committee to work out desirable and valuable reorganization of the spending of the large sums of money involved in this system, to establish a policy of imbursement related to the findings of the numerous investigations afoot as to the function of the architect and his education, and to implement these policies. Perhaps, too, a committee to consider the possibility of some proper relationship between the profession and the students via the Institute.

Certainly the *laissez faire* attitude of the New Establishment in certain quarters must cease. This is all certainly a sign of the times and probably in part it explains the reluctance of the young to make the Institute scene. And Marblehead yourself Banham, I didn't see you at this distressing affair; indignation is needed here as much as in outer spacemanship.

MICHAEL MACRAE

London

Synthesis

SIR: Colin St. John Wilson's paper on synthesis was invigorating. I was delighted to hear another connect the notion of "therapy" with teaching, in

our very own chaos, as found in each school of architecture.

I too feel that architecture must not be detached from "its matrix in rationalism." But the new, the deeper rationale must be based on scientific laws of synthesis to complement the endless analysis, in itself sterile.

I would offer two hypotheses which are relevant to architecture and which have considerable evidence to support them; evidence which I have examined and sifted myself, but which can never be as nice as that in analysis.

1. All movement in the living tends to be spiral. Analysis has merely found that in the movement of the blood, for example, or in the movement of ameoba, spiralling is an irreducible, basic factor. The formulation, that all movement in life tends to spiralling, is one of synthesis, and carries meaning far beyond the mere addition of the analytically determined facts.

2. All enclosures of a living thing tend to absorb some of the essence of it, and so become part of it, in that sense. The different behaviour of various materials and shapes, in that sense will become an important aspect of architecture, but it cannot be studied by analysis alone. As with the previous point, there is a considerable amount of evidence of astounding richness.

If the above sounds rather fanciful only, may I assure you that I take seriously Aalto's plea: "Words are for those with promises to keep." The above words have meaning.

PAUL RITTER

Nottingham.

BASA ACTIVITIES

The Bristol Conference was the second in a series of conferences designed to study Architectural Education as part of the aim of our national organisation to improve educational standards. The success of this aim will depend on the ideas arising from the conferences permeating into student views and into the profession itself. This will be achieved by BASA representatives ensuring that these ideas are understood and discussed in their schools; by using the BASA AJ Supplement as the mouthpiece of these views; by the Executive circulating the schools with reports on the year's activities; and lastly, but most importantly, by the establishment of a research group which will study the implications of the conference report (see BASA Supplement AJ February 4) and go further into the problems of Architectural Education, and so forming the basis for the next conference. Isolated research which will affect some aspects of a balanced architectural syllabus is already being carried out by the RIBA and in one or two schools. It may well be possible that a co-ordinated research programme over the whole country can be established into which the BASA group will fit, thus producing a comprehensive body of information from which it will be possible to make a real contribution towards solving the many difficulties facing the profession, and in particular to improving the standards of architectural education.

Many a time the question is asked: what is BASA doing? Or what do I get for my 5s.? Before answering this I should like to say that the success of BASA depends on all members taking part in its activities. To this end it was decided at Bristol to split the country into seven regions. Within these regions individual schools will take responsibility for activities such as exhibitions, which have hitherto been centralised, while the Executive will provide secretarial and any other encouragement and help that might be needed.

Conferences. One of our main activities has been the series of conferences which have taken place at approximately eight-month intervals over the past three years, the purpose of which has been, firstly, to establish the Association, and then to study and improve architectural education.

Travelling Exhibitions. This was initiated under the auspices of Paul Power (Regent St. Poly) well over a year ago. Twenty-six schools of architecture provided at their Societies' or Schools' expense, an exhibition comprising photostats, or slides, or prints of projects designed in the schools. BASA provided cardboard boxes, which circulated the exhibitions from school to school, remaining at each for about a fortnight. This seemed to go well for a time, but suddenly developed thrombosis, probably due to someone failing his exams and being unable to despatch the exhibition, or perhaps because of an incorrect address. This worthwhile activity will be continued on a regional basis this year and steps will be taken to ensure that records of who has the exhibitions are made so that thrombosis cannot occur again.

Pool of Lecturers. This was conducted for the first part by Gavin Maxwell (Kingston). He produced about 8 lecturers willing to lecture on about 20 dates. BASA was able to subsidise their expenses to some extent. Unfortunately, only one of these was prepared to lecture in the North, where the schools would appreciate this facility most. Ken Claxton (Portsmouth) took over from Gavin towards the end of the year. Ken has proposed certain organisational changes which will make the system much easier to run, details of which will appear in the next BASA Supplement.

Vacation work at home and abroad. This involved a tremendous amount of work for Tony Monk, the Hon. Secretary for the past two years, and for Mrs. Perrin, our Permanent Secretary. 40 jobs were found, mainly in the south, with contractors, public authorities, and architects in private practice. Unfortunately only 8 students took advantage of this service. Every effort will be made to continue this work and make sure that the opportunities offered are well publicised. Approaches to 40 architects and to foreign architectural societies, advertisements in foreign magazines, produced no positive offers of work. It was decided at Bristol to investigate the possibilities of an exchange system, whereby the student in his own country would find work for his opposite number abroad. David Lewington (King's, Newcastle) has undertaken this and will be reporting in due course. In addition, a pool of addresses of foreign architects who have employed students in the past will be collected and circulated to the schools.

Discussion Groups. One of our more recent endeavours was the gathering together of students, architects and engineers, etc., to discuss topics of common interest. Four such meetings were held. These have proved a worthwhile beginning and will be continued during the course of this year, reports of which will appear from time to time in the AJ.

HILARY CHAMBERS

President

SUBSCRIPTIONS

BASA cannot continue without your financial support. Will all representatives who have not yet done so, please collect subscriptions and send them to the Hon. Treasurer, British Architectural Students' Association, c/o The Building Centre, 26 Store Street, London, W.C.1.

BASA DIARY

ARCHITECTURAL ASSOCIATION
March 5, 9.30 a.m.
Visit to Bowater Paper Corporation, Northfield, Kent (architects: Farmer and Dark).
March 10, 6.15 p.m.
First of series of four illustrated talks by Oliver Cox and Robert Purdew on " Housing and Development Work by the LCC."
Talk No. 1: User Requirements, New Types and Techniques.
March 17, 6.15 p.m.
Talk No. 2: Windows.
March 24, 6.15 p.m.
Talk No. 3: Heating.
March 31, 6.15 p.m.
Talk No. 4: Thermal Insulation, Services and Mural Techniques.
(Buffet before all four talks at 5.45 p.m. Admission by ticket only.)

BARTLETT SCHOOL OF ARCHITECTURE
March 12, 8.30 p.m.-2.00 a.m.
Carnival Ball (6s., 10s. members, 7s. 6d., 12s. 6d. non-members).

BRIGHTON COLLEGE OF ART AND CRAFTS
March 3-11.
New Towns Exhibition: Harlow.
March 14-25.
New Towns Exhibition: East Kilbride
March 31, 7.0 p.m. (King and Queen Hotel.)
James Gowan: " Trends in Housing "
March 28-April 8.
New Town Exhibition: Stevenage.
March 31, 7.0 p.m.
L. G. Vincent: " Stevenage."

LIVERPOOL SCHOOL OF ARCHITECTURE
March 11.
Ove Arup.
March 18.
Dr. Gore.

RWA SCHOOL OF ARCHITECTURE
March 2-4
Exhibition at the Building Centre, Bristol, of schemes for the development of Hotwells, Bristol, by 4th year students.
March 17.
Visit to Berkeley Atomic Power Station.

A SURVEY OF ARCHITECTURAL EDUCATION

A resumé of a report given by Chris Musson at the BASA Bristol Conference, January, 1960

During 1959, Chris Musson and George Davies of the Welsh School of Architecture determined to carry out an investigation into the state of architectural education in Britain. The task was an ambitious one but with the help of Dafydd Jones-Evans and many other students of the school a questionnaire was prepared and submitted to the leading centres of architectural education. Twenty of the 24 fully recognized schools and about half the others replied. It became evident that these replies would be hard to analyse scientifically as many of the questions asked were open-ended, and consequently some of the answers were difficult to collate owing to their variety. Regretfully, it was decided to study only the replies from the 24 fully recognised schools. Aberdeen, Birmingham, Kingston-on-Thames and Hammersmith did not return the questionnaire. Birmingham's lack of response was a disappointment since its evidence as one of the most progressive schools in the country might have been most valuable.

The questions asked concerned both the students and the staff. They dealt with design instruction, lectures and examinations; methods of presenting, criticising and marking project drawings; accommodation and physical facilities; and staff-student relationship and co-operation. The answers broke down into six groups under the headings: qualifications, facilities, students, staffs, staff-students, and teaching methods.

The report has not been crammed with figures. It attempts very briefly to paint a picture, a picture that has not turned out to be flattering to staff or students. It would be unwise to reject the conclusions merely because they are unpleasant; for the unanimity of opinion gives it credibility.

Qualifications

Of the 9,000 persons who would call themselves student-architects, a mere third are studying in the recognized schools. The percentage which takes degree courses is even lower. Such courses are provided in nine schools but in some of these less than 10 per cent of the students enter for a degree. Liverpool alone has a 100 per cent degree school.

It is clear that full advantage is not taken of the degree courses because of the higher educational standard required for entry by comparison with the diploma courses. It is hoped that the raising of the standard of entry to all schools as proposed by the RIBA Oxford Committee will remedy this.

The position in post-graduate studies is more depressing. Only three schools were found to have post-graduates at present doing research in architecture: the Architectural Association, Edinburgh, and Manchester. Liverpool has facilities for the Ph.D. degree. Five schools have full or part-time post-graduate courses in town planning, and one has a course in engineering. Post-graduate opportunities are not being taken; this is patently clear. And the result is to be seen in the failure of the profession to play its part in the world of ideas.

Facilities

The authors of the study were much concerned with investigating the conditions under which the staff and students carried out their work. Believing firmly in the value of student discussion and activity as a means of forming the student-architect, questions concerned not only studio, exhibition, and library accommodation, but also the space allocated for the students' lounge and committee room. In this respect, they found that only eight out of 18 schools have a lounge for the use of the students and that the same number provide a committee room for the students' society executive. Thus there are at least ten recognized schools in which there is no common lounge set aside for the students of the various " years " to meet and exchange ideas.

Nor are there facilities for the schools to get together and exchange ideas beyond the occasional sporting fixture. In fact, the schools keep very much to themselves even when they are a part of a university.

The facilities for work—namely the studios—received a good rating in only two cases. Eight thought their studios were poor. Libraries were also studied. All but two schools rated their general libraries good, but eight considered their technical libraries inadequate. Two have none at all. As regards exhibition space, about a quarter of the schools have neither exhibition gallery nor corridor in which to hang their own drawings or those of other schools.

Students

The survey did not flatter the students either. Less than a quarter have subjects at GCE Advanced Level. In fact the low standard of general education required for entry to some diploma courses in architecture ensures that the profession has student applicants of a lower general educational standard than any other which is of comparable standing.

This fact may have some bearing on the general apathy that some students exhibit. Replies to the questionnaire indicated that many were content to achieve their qualifications without making efforts to broaden their interests, and to appreciate their student career as more than a series of annual steps leading to a certificate of com-

petence. There is little interplay of ideas between years to assist students to see the overall picture of their course of study, and in this connection as a corrective stimulant or a substitute, the authors were interested in two documents issued by the AA. One introduces the new student to the school in general; and the other notes the curriculum and explains the contents of the courses which the student will take during his five years at the school.

Even when acting as a body, the students are apathetic. In half the recognised schools, the students' club or society is " simply existing." Debating and discussion groups are rare. Too late does the student realise on qualification the lost opportunity of practising " committeemanship " and public speaking, qualities sometimes hard to develop but very beneficial to the practising architect.

About 85 per cent. of the students have grants to cover the whole of their course.



" . . . *what percentage of teachers were men of creative ideas as opposed to refugees from the harder world of professional practice.*"

Staffs

If the students were frank about themselves, they were blunt about the staffs. Eight out of eighteen heads of schools were well respected; the remainder were classified as routine administrators, reactionaries, or due for retirement.

Questions were included to find out what percentage of teachers were men of creative ideas as opposed to refugees from the harder world of professional practice. Three schools claimed 100 per cent, but some returned answers like 10 per cent or 20 per cent, reflecting at best a marked lack of confidence.

Strong criticism was levelled at the teaching of structures, materials and the history of the modern movement; and the virtual omission of lectures in engineering, sociology and costing was deplored. Many courses are taught by general lecturers with no specialised knowledge of the subjects.

The reflections of students on their teachers must be accepted with reservations, but it is interesting to tie-up this lack of confidence with the deplorable lack of academic research amongst teachers of architecture expressed at the RIBA Oxford Conference.

Staff-students

In the light of these comments, it was hardly surprising to find that students wrote with the same bitterness of staff-student relationships. In particular, they resent being treated as small boys. Staff-student councils or committees can do much to help but as yet only half of the schools have such a medium. But the real answer seems to lie in more informal discussions between the students and staff, and in the use of small courtesies, such as a simple " Mr." before a student's name.

Teaching methods

Something of the " schoolmaster " attitude may be seen in the method of teaching design. Too many students are required to produce a design answering the same problem and given a simple grade or mark for it. Thus, the student is presented with a fully worked-out programme of requirements to which he has to adhere closely. He usually answers this problem in the form of a design worked out by himself in his own little vacuum. Few schools require students to develop programmes from outline briefs or work on projects as part of a group. These are two important aspects of the architect's commitment—the ability to fill out a client's brief; and to co-operate with his fellow architects and other advisers.

Insufficient emphasis is given to methods of designing in three dimensions. Model making, for instance is not encouraged.

The marking and criticism system in general use tends to be mechanical and causes frustration, competitive mark grabbing and a destruction of the incentives that further co-operative student effort and original thought. It excludes all forms of communication between the author of a design and the jury except through the medium of his drawings. Rarely is the student invited or permitted to give an explanation verbally or in writing of his design or the ideas contained in it. Here is an opportunity missed of training the student to describe his project in public. In all probability he will have to do so later in life. In addition, he could also be asked to submit a report.

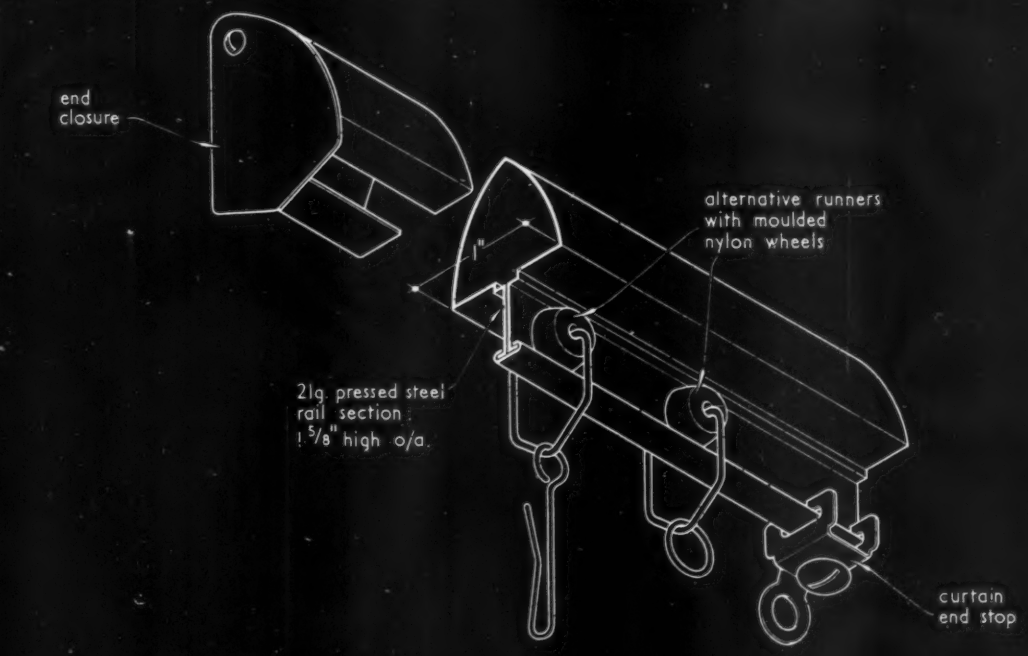
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The conclusions to be drawn from the survey are not attractive. The students consulted were not impressed with the state of architectural education today—the schools, staff, students, relationships and teaching methods were all strongly and almost unanimously deplored. All that they said may not be true, but at least it certainly gives much food for thought.

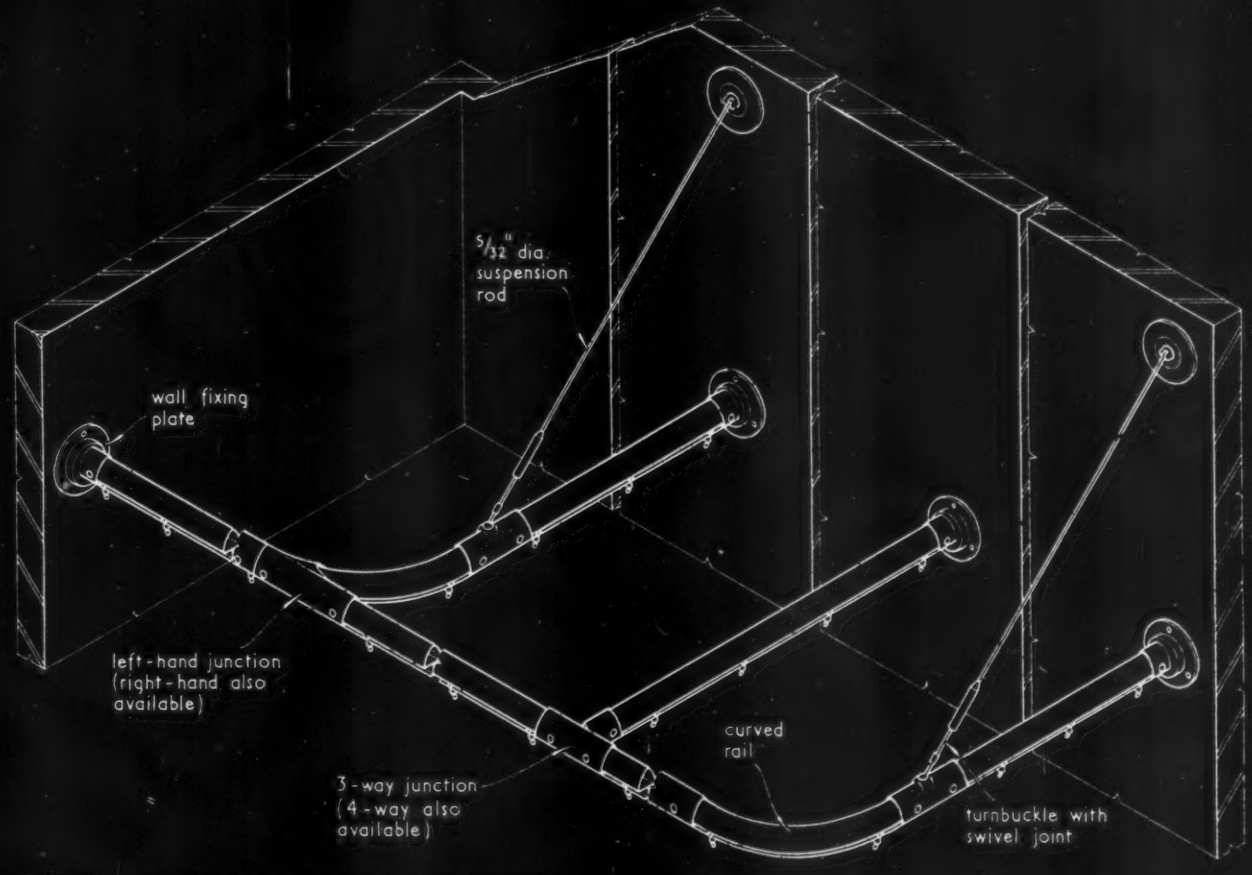


FITTINGS | CURTAIN FITTINGS

The Architects' Journal Library of Information Sheets 755. Editor: Cotterell Butler, A.R.I.B.A.



ISOMETRIC VIEW OF RAIL SECTION.



GENERAL ASSEMBLY OF COMPONENT PARTS.

·RUFFLETTE· CUBICLE TRACK. Manufacturer: Thomas French and Sons Ltd.

44.D3 ·RUFFLETTE· CUBICLE TRACK

This Sheet describes the Rufflette Brand cubicle curtain track for use in hospitals, schools, ships, etc. The drawings on the face show details of the main components and a typical assembly.

Material and Design

The main components are in 18-gauge pressed steel. The track section is designed to prevent the accumulation of dust and is easily cleaned.

Components

Straight rail: This is of 21-gauge steel supplied in lengths of 2 ft. 0 in. to 4 ft. 0 in. in 6-in. increments and up to 9 ft. 6 in. in 3-in. increments; special sizes can be cut to order.

Straight coupling: This is provided with bolts for securing ends of track lengths.

Wall fixing plate: This is screwed to the wall for fixing the end of the rail.

Curved rail: This is supplied in standard lengths of 1 ft. 0¾ in. for right-angled bends at end cubicles.

Right- and left-hand junctions: With these components a continuous track can be formed for the curtain at side and front of intermediate cubicles.

3-*way and* 4-*way junctions:* These are for forming straight junctions at which the main track runs through and the meeting tracks stop at the junction.

Fittings for tubular rail: A component is available for joining the cubicle track to a straight tubular section, e.g., where cubicles cross a window. A wall fitting for fixing the end of the tube is also available.

Fittings for suspension rods: The curtain tracks may be suspended by $\frac{5}{32}$-in. rods from walls, as shown in the drawing on the lower face of the Sheet, or from the ceiling. In addition to the suspension rod, which is available in lengths of 4 ft. 0 in. to 10 ft. 0 in. in 1-ft increments, the fittings available are a straight coupling section with turnbuckle and swivel joint and a wall or ceiling fitting also with swivel joint.

End closure: This is for finishing a free end of curtain track where necessary.

Track connector: The ends of straight rail sections are drilled and slotted to facilitate the fitting of this component which connects the curtain track itself at junctions.

Runners: The runners have moulded nylon wheels and are available with a hook or ring fitting for the curtain.

Curtain end-stop: This is available for anchoring one end of a curtain as required.

Applications

Cubicle curtain tracks are suitable for use in hospitals, clinics, schools, ships, fitting rooms in clothing shops and hairdressers; they may also be used for shower curtains in hotels and private houses.

Finish

The components are finished in ivory stove enamel after phosphate treatment. Curtain hooks, bolts, etc., are bright zinc plated.

Trade Name

These products are manufactured under the trade name ·Rufflette· Brand.

Further Information

The manufacturer will supply on request a list of appointed stockists/fitters throughout the United Kingdom.

Compiled from information supplied by:

Thomas French and Sons Limited.
Head Office: Chester Road, Manchester, 15.
Telephone: Blackfriars 1887 (10 lines).
Telegrams: Rufflette Manchester.
London Office: Dundas House, 59, St. James's Street, London, S.W.1.
Telephone: Hyde Park 0093/4.
Canada: Thomas French and Sons (Canada) Limited, 63, Wellington Street West, Toronto, 1.
New Zealand: G.P.O. Box 9, Auckland, C.1.
France: 78, Boulevard Malesherbes, Paris, 8e.
Australia: 65, York Street, Sydney.

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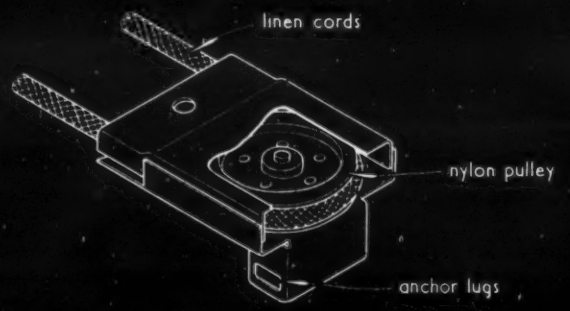
The

track section of

linen cords

FITTINGS | CURTAIN FITTINGS

The Architects' Journal Library of Information Sheets 756. Editor: Cotterell Butler, A.R.I.B.A.



DETAIL OF HORIZONTAL PULLEY AND HOUSING.

ISOMETRIC VIEW OF TRACK ASSEMBLY.

DETAIL OF VERTICAL PULLEYS AND HOUSING.

·RUFFLETTE· DOUBLE TRACK CURTAIN SUSPENSION SYSTEM. Manufacturer : Thomas French and Sons Ltd.

44.D4 ·RUFFLETTE· DOUBLE TRACK CURTAIN SUSPENSION SYSTEM

This Sheet describes the Rufflette Brand double curtain track, which is designed for smooth cord-operation of all types of curtain, including very heavy ones. The drawings on the face show the track and details of the pulleys for the operating cords.

Material and Design

The main components are in 21-gauge pressed steel. The curtains are operated by means of a cord which enters the inner, or window side, recess of the track at one end and returns via the outer recess, after passing over a single horizontal pulley at the opposite end. The free ends of the cord pass over vertical pulleys and are tensioned by weighted pulls. The mechanism is completely concealed and the track is simply screwed to the ceiling or lintel: it can also be fixed on the face of the lintel by means of angle brackets, at small extra cost.

Components

Track section: This is provided with $\frac{3}{16}$-in. diameter fixing holes at $1\frac{1}{2}$-in. centres for fixing to ceiling or lintel.

Face-fixing brackets: These are available for face-fixing of the track where required.

Pulleys: The pulleys are of moulded nylon and are mounted in steel housings which fit into the ends of the track. The housings have lugs for anchoring the fixed ends of the curtains.

Master glider: Each length of track has two moulded nylon master gliders, one on each side, to take the free end of the curtain. The operating cord is threaded through the master glider which has two suspension rings for the curtain.

Free gliders: Free-running moulded nylon gliders with one suspension ring to each are fitted, three per foot of track, in addition to the master gliders.

Cord and pulls: Non-stretch linen cord of sufficient length to suit windows of average height is provided. For windows over 10 ft. 0 in. high longer cords can be supplied. The pulls are of mild steel with rubber protective rings.

Sizes

The track is supplied in lengths from 3 ft. 0 in. overall (including pulley housings) to 11 ft. 0 in., in 3-in. increments.

Fixing

The track should be fixed at approximately 3 ft. 6 in. centres. A screw should be fixed at each end as near as possible to the pulley units. The top edge of the pleating tape on the curtains should be not more than $\frac{1}{2}$ in. clear of the top edge of the curtain, to allow the curtains to clear the lower face of the track.

Finish

The components are finished in ivory stove enamel after phosphate treatment.

Trade Name

These products are manufactured under the trade name ·Rufflette· Brand.

Compiled from information supplied by:

Thomas French and Sons Limited.
Head Office: Chester Road, Manchester, 15.
Telephone: Blackfriars 1887 (10 lines).
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working detail

GLAZED WALL: OFFICES IN BASLE

Suter and Suter, architects (material supplied by Barrie Sheldon)

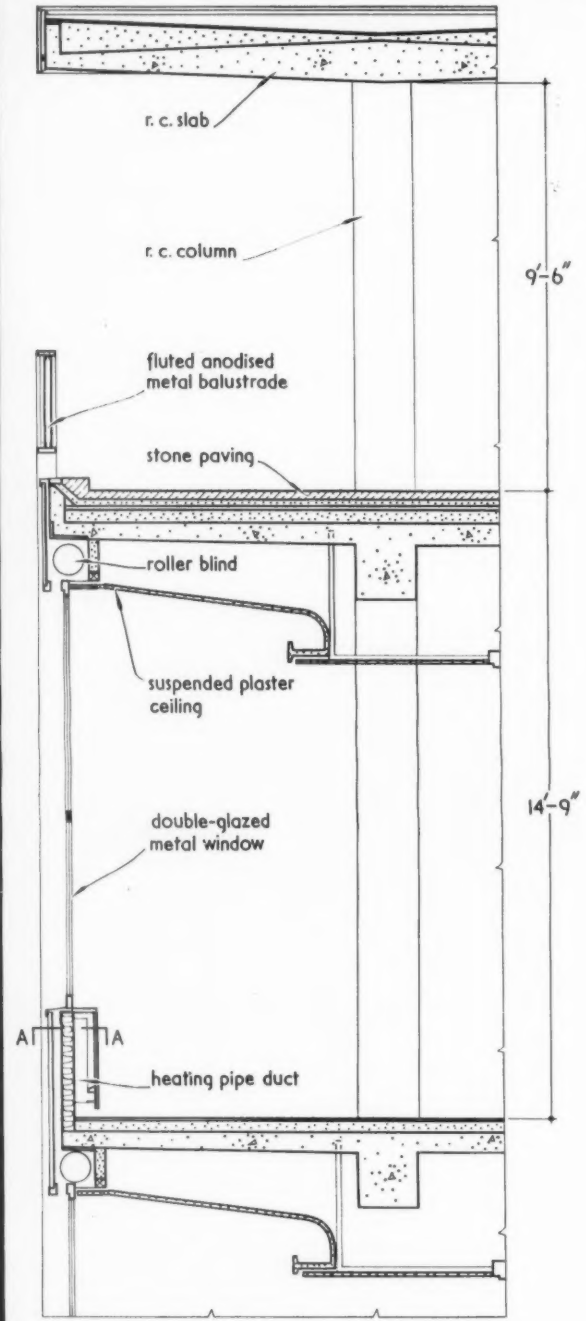


Even in this country it is probably necessary to provide some form of sun control on west-facing facades which have large areas of glass. The most effective form of sun control is a movable sun-breaker fixed outside the glass. In this example (which is typical of current Continental practice) sun control is provided by an external roller blind which is guided by the mullions.

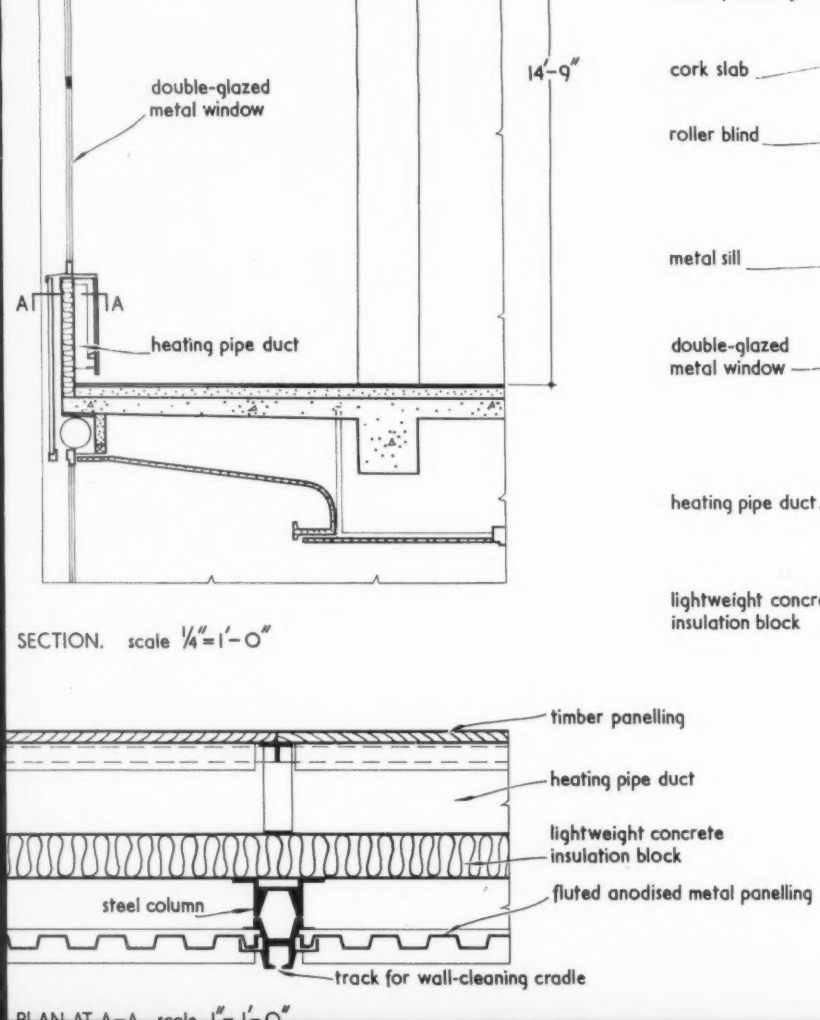
working detail

GLAZED WALL: OFFICES IN BASLE

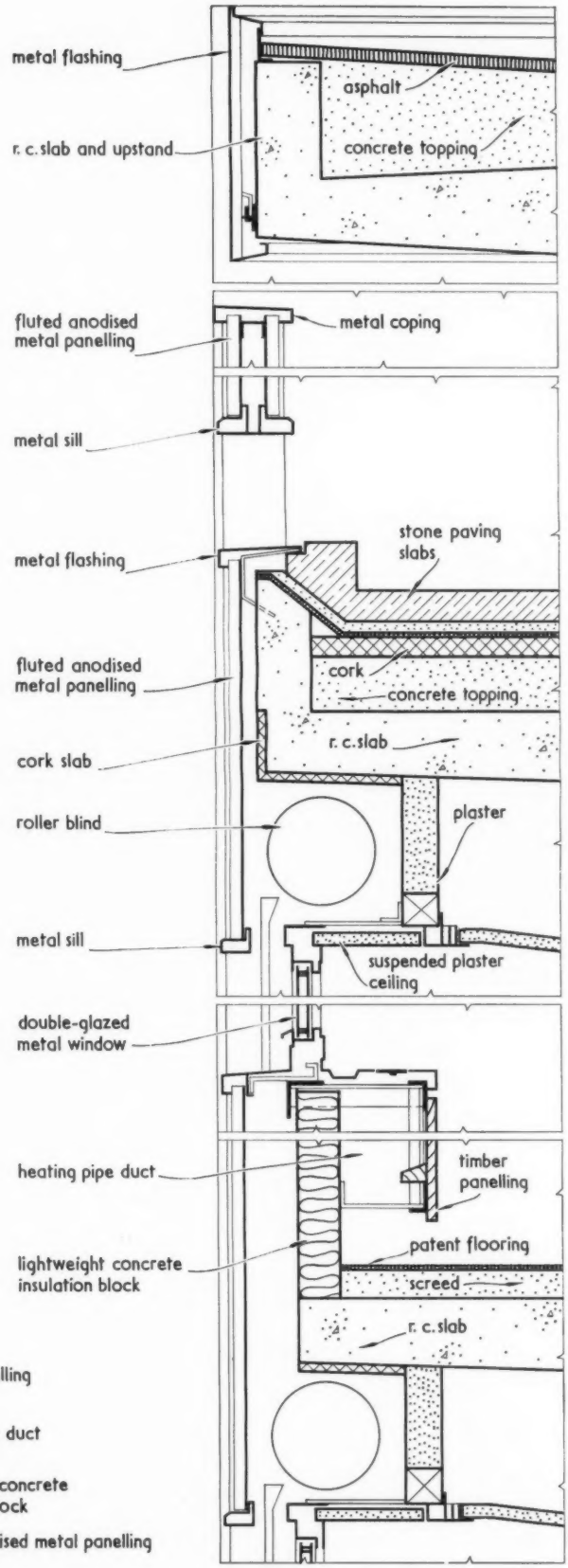
Suter and Suter, architects (material supplied by Barrie Sheldon)



SECTION. scale 1/4"=1'-0"

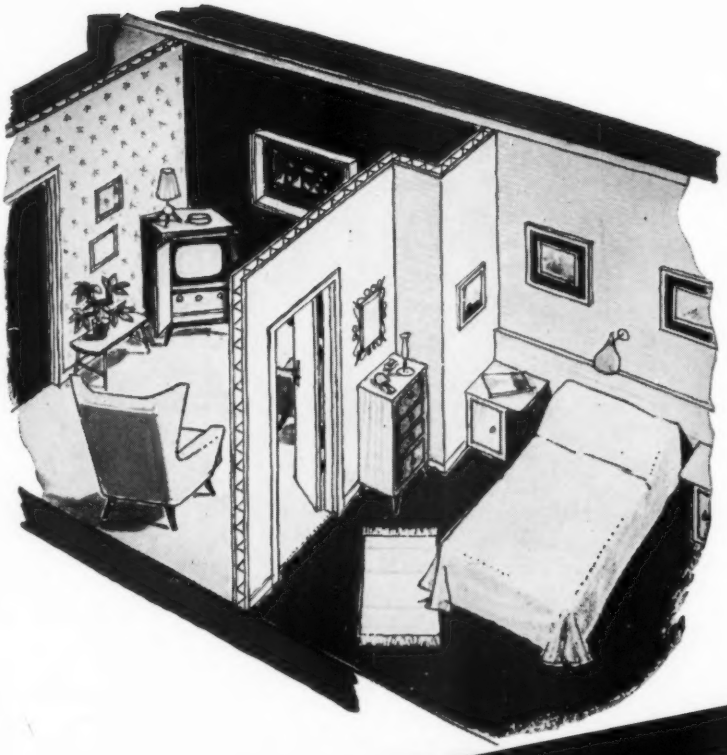


PLAN AT A–A scale 1"=1'-0"



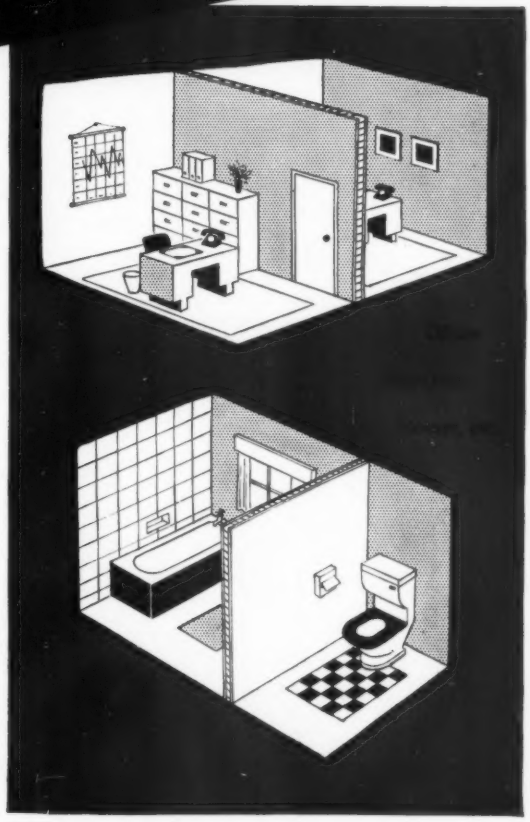
DETAIL SECTION. scale 1"=1'-0"

note: figured dimensions in feet and inches are approximate



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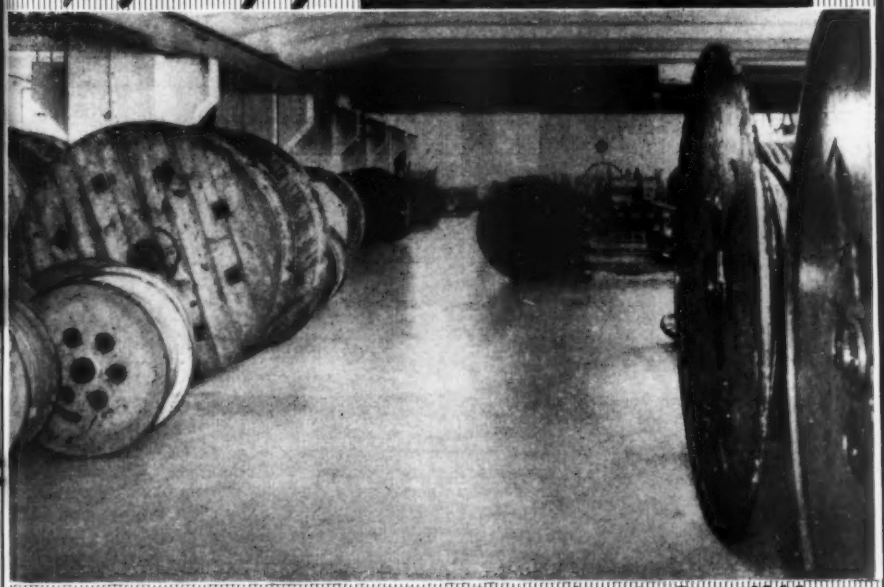
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This year's Woman's Journal *" House of The Year " at Woolton, Liverpool, was designed by Gerald R. Beech and Dewi-Prys Thomas. Of the design, the architects say that they have tried to " tailor the house to the site in such a way as to suggest a pattern of more wholesome civic development while still providing clients with the prestige they associate with detached houses, rather than semi-detached or terraced. Assuming the hypothesis of a whole estate being developed with houses of this prototype form, we have aimed at an answer which might evoke the concord that one associates with terraces of the 18th century while retaining the detached character demanded by the Englishman of the mid-twentieth."*

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Announcements

PROFESSIONAL

David Mylne, A.R.I.B.A., practising as Walter Duns, Langtongate, Duns, Berwickshire, has opened a Branch Office at 112, Castlegate, Berwick-upon-Tweed, where he will continue to practise under the style of Walter Duns and will be pleased to receive trade catalogues, particularly of BSS sizes.

Dennis I. Page, A.R.I.B.A., Gerald A. Linfield, A.R.I.B.A., and James A. D. Cox, A.R.I.B.A., have entered into partnership under the style of Dennis Page & Partners at 28, Beaumont Street, Oxford (telephone Oxford 58385) where they will be pleased to receive trade literature and catalogues.

E. W. H. Gifford has now taken into partnership J. R. Lowe, B.SC., A.M.I.C.E., and H. E. Lewis, M.SC., D.I.C., under the style of E. W. H. Gifford & Partners, consulting engineers.

TRADE

William A. Weaver is now Export Sales Office Manager of the English Electric Company's Domestic Appliance Division.

Electrolux Ltd. have formed a new sales division to cover the South Wales area. The offices are at 60, Newport Road, Cardiff (telephone Cardiff 30846) and the manager is David F. Ireland.

Causeway Reinforcement Ltd., of Five Ash Works, Dover Road East, Northfleet, Kent, have appointed T. C. Leach to be their representative in the five Midland counties for their Surface Armouring and Multi-Purpose Trestles, and C. T. Withy as their representative in Lancashire and Yorkshire.

The name of the NCK Rapier Sales Co. Ltd. has been changed to NCK-Rapier Ltd.

Leslie F. Chamberlain, recently appointed Chairman of the Chamberlain Group of Companies, is to visit Trinidad to sound the market for manufacturing and marketing standard steel buildings in the Caribbean area.

The Bartrev Board Co. Ltd. have moved their London Sales Office to 5, St. James's Place, London, S.W.1 (telephone Grosvenor 2415/6).

The Tentest Fibreboard Co. Ltd. have re-registered the company under the name of the Tentest Co. Ltd., Fiboard House, Oakleigh Gardens, London, N.20.

The Bath Sales Division of Allied Ironfounders Ltd. have moved their offices to 28, Brook Street, London, W.1 (telephone Grosvenor 8941).

B. G. Green has joined Multiglass Ltd. as a technical representative.

J. B. Selby is now manager of the Export Department of Turners Asbestos Cement Co. Ltd., of Trafford Park, Manchester 17.

Allied Ironfounders Ltd. announce that their chairman, W. H. Smith, has decided to retire from the chair and from membership of the board on March 31.

H. A. J. Battam is now representing T. & W. Farmiloe Ltd. in East Anglia.

F. Hills & Sons Ltd. have appointed William T. Eden & Co. Ltd. as stockists for Duramel.

Expandite Ltd. have formed a subsidiary company, Expandite Adhesives Ltd. to manufacture and market a range of adhesives. The company will operate from offices and factory premises at Birchley Street, St. Helens, Lancashire (telephone St. Helens 7376/7.

R. E. Landsbert is now a director of Marryat & Scott Ltd. and Marryat & Place Ltd., two of the operating companies of Marryat & Scott Holdings Ltd.

The Timber Development Association Midlands Regional Office have moved to 55, Pershore Street, Birmingham 5 (telephone Midland 1079).

Adams Design Associates of Chelsea, have been retained by The Airscrew Company & Jicwood Ltd. to create exclusive designs for Hardec and Weydec, and to advise on all matters appertaining to design and architecture.

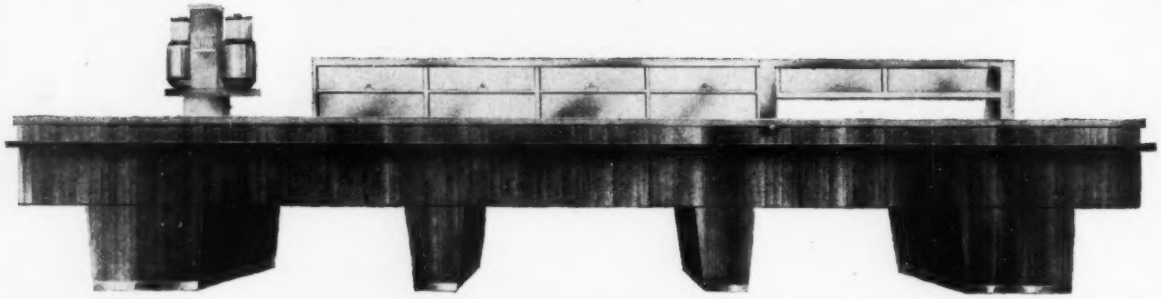
Szerelmey Ltd. have appointed Kenneth G. Hoyle as their Southern Area representative.

Edward Wood & Co. Ltd., constructional engineers, have transferred their London Office to 78, Buckingham Gate, London, S.W.1 (telephone Abbey 1948/9).

A. R. Dale-Harris, a director of The Unit Construction Co. Ltd., has been made a member of the Board of Parcar Ltd.

Massey-Ferguson have reorganized their Engineering Division in the UK, under the direction of Ewen M'Ewen, Director of Engineering, Europe. Dr. B. F. Willetts, PH.D., M.SC., is now Chief Engineer, UK.

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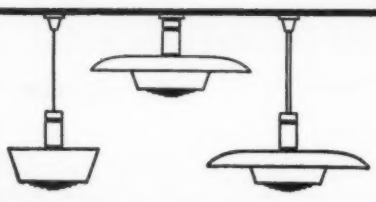


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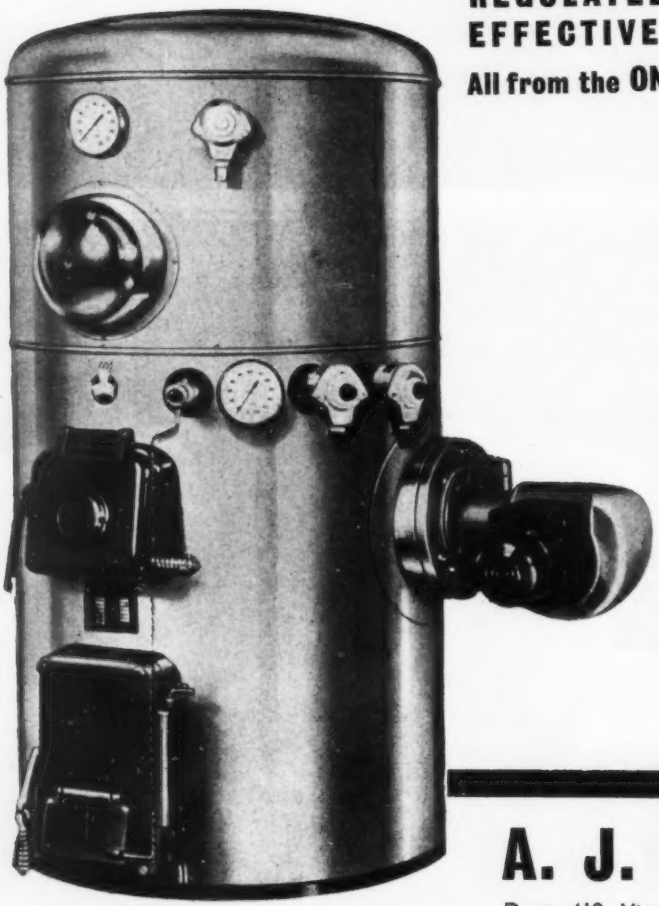
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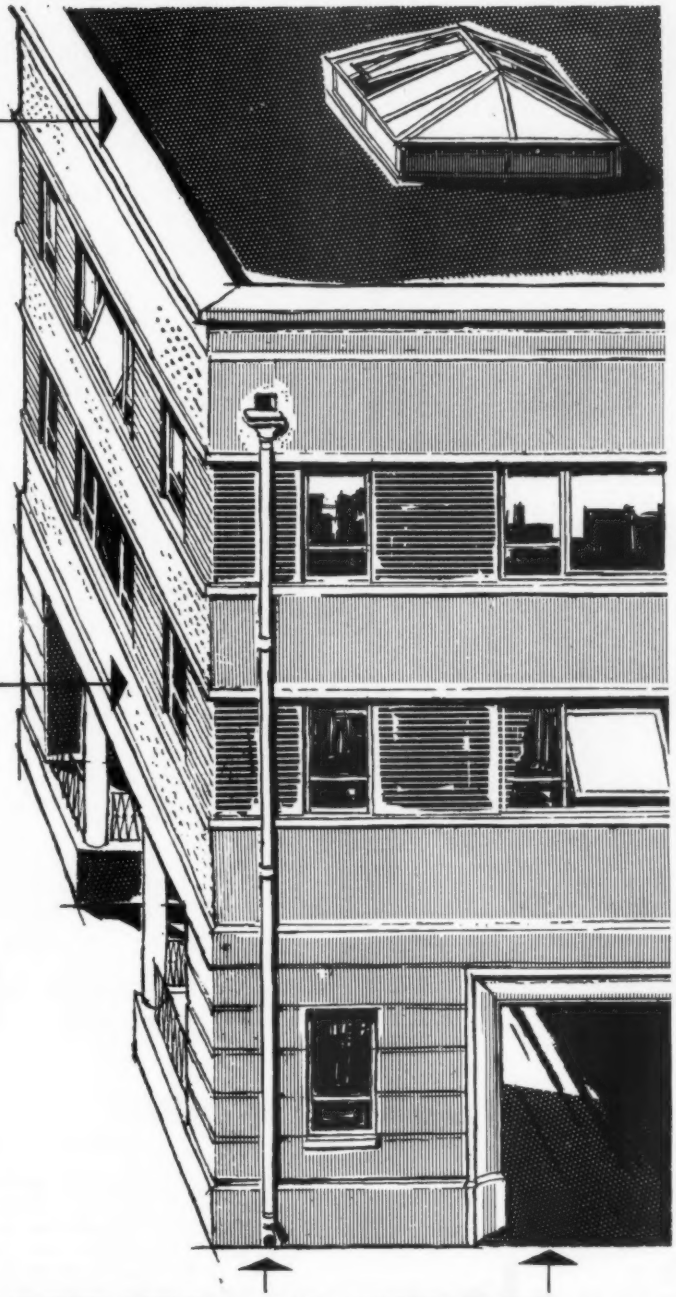
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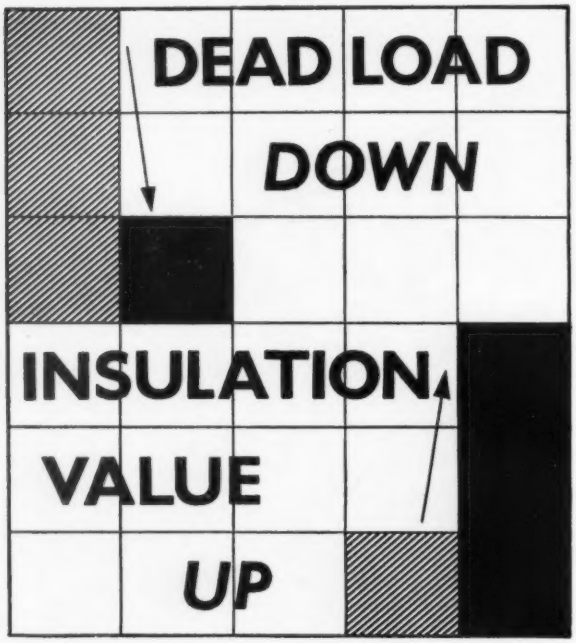
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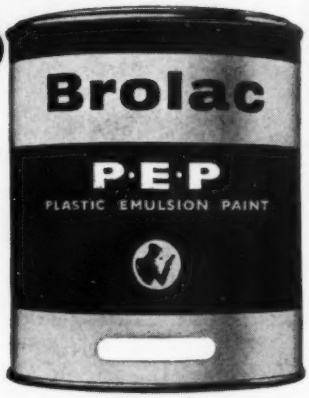
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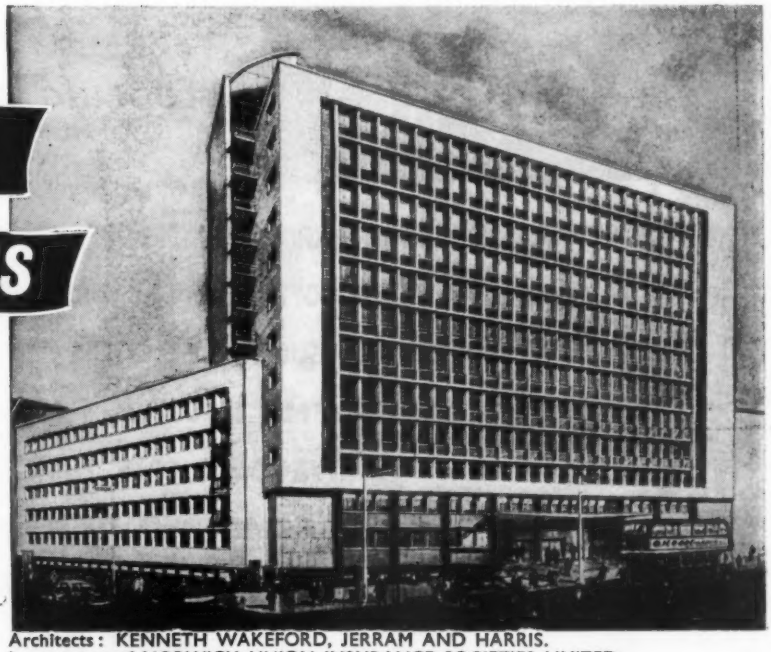
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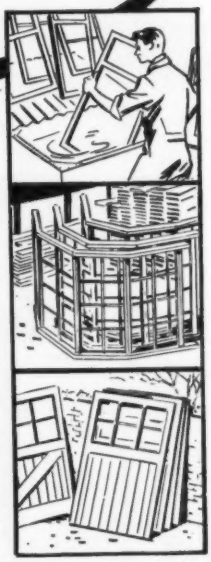
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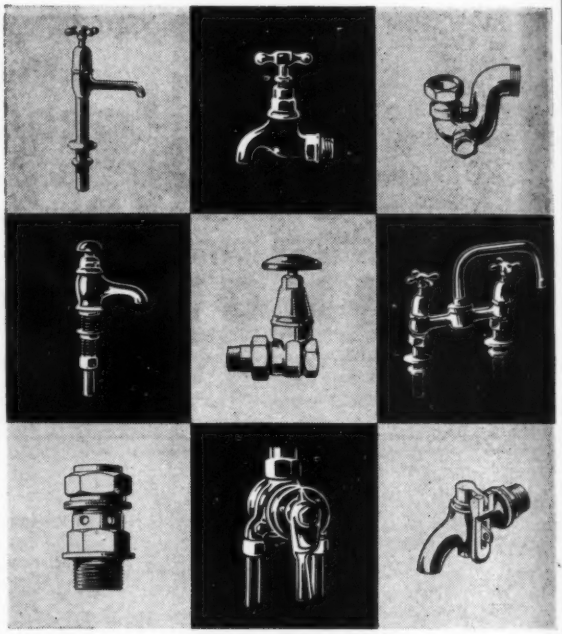
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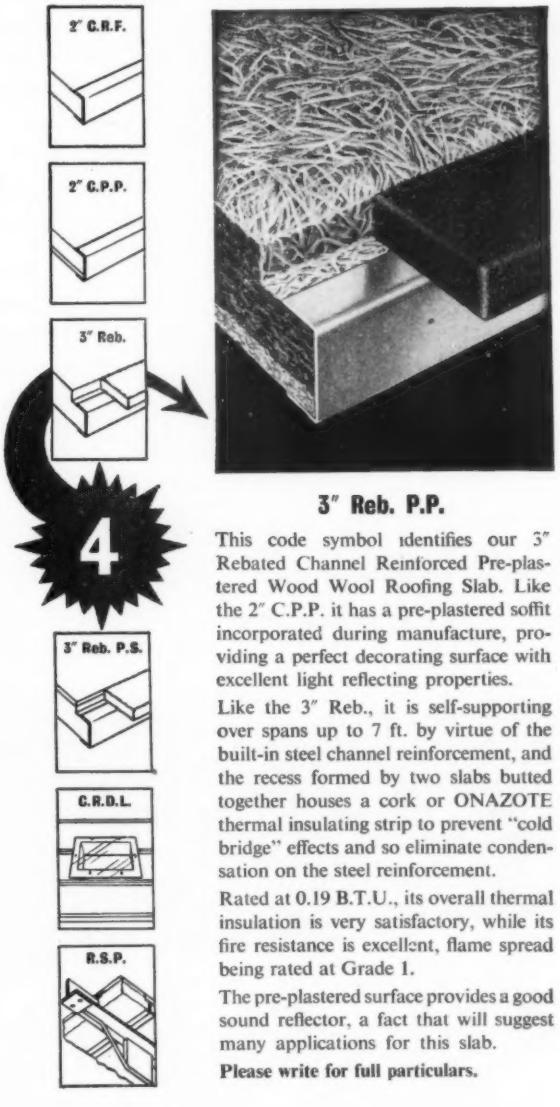
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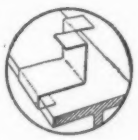
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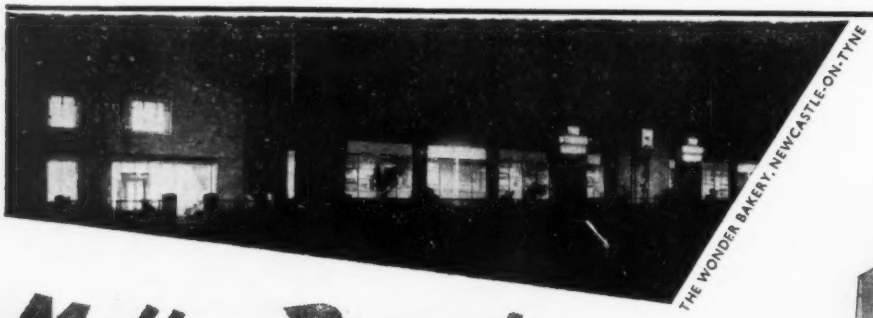
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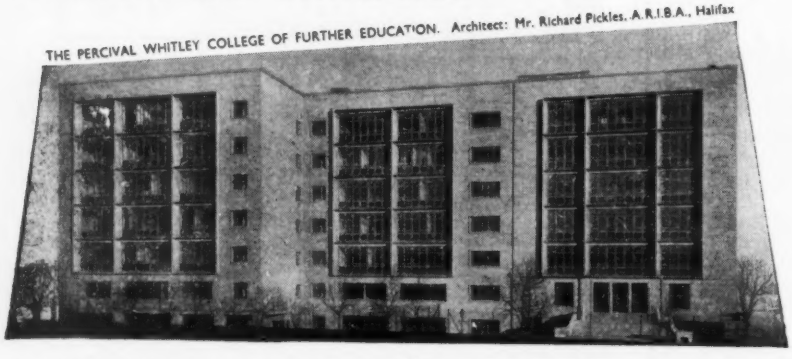
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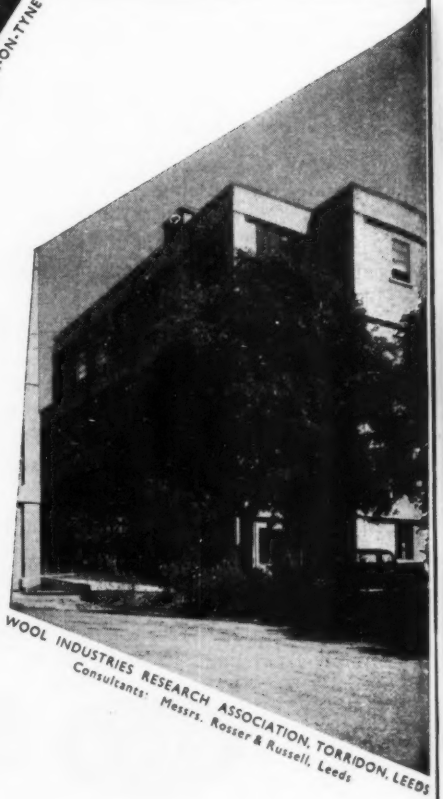
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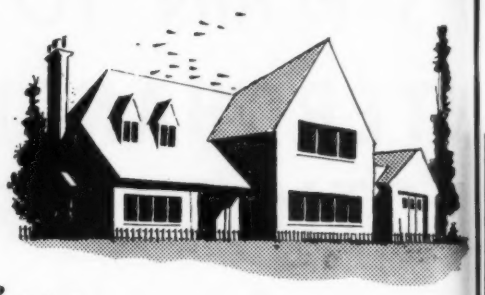
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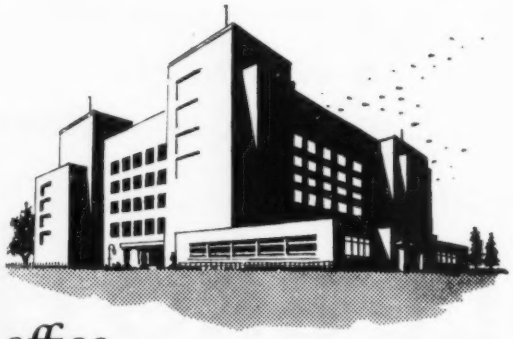
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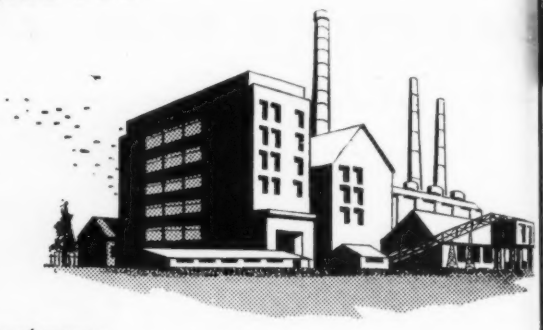
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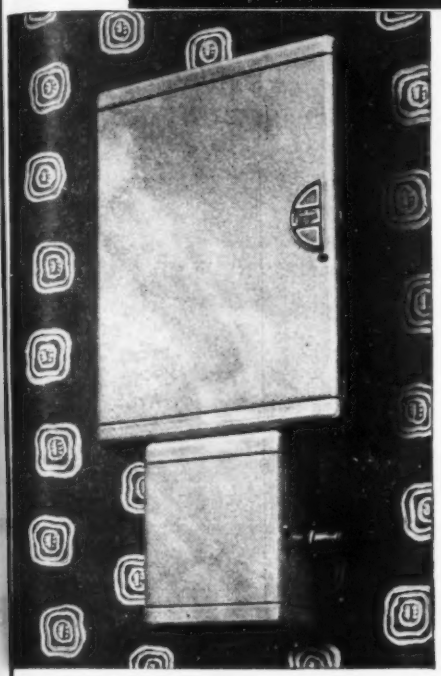
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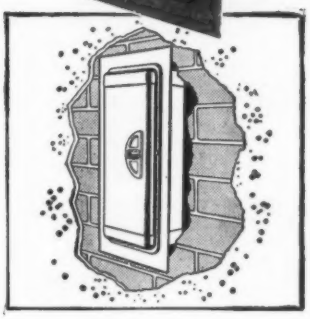




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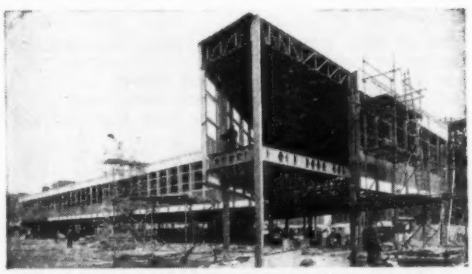
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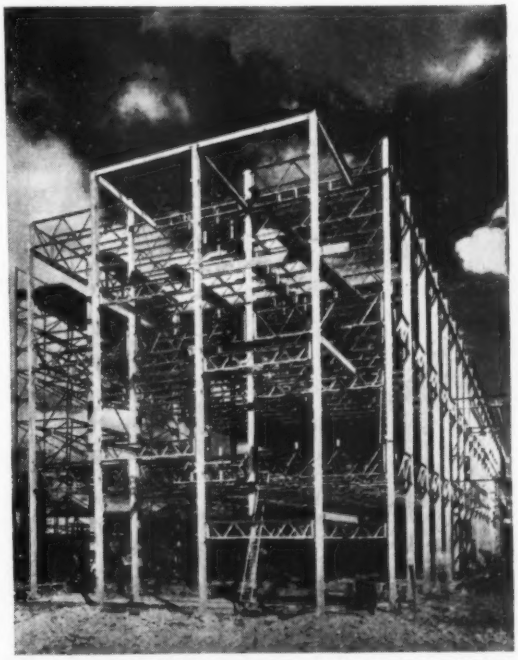
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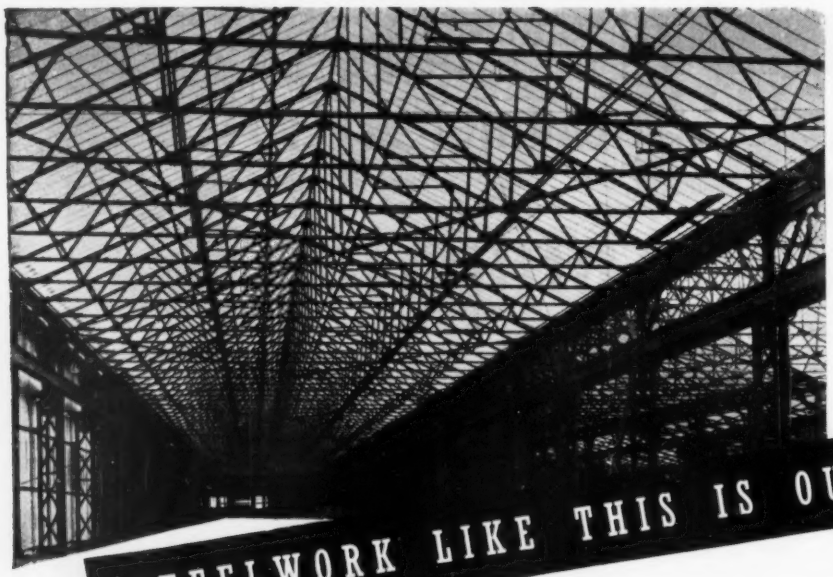
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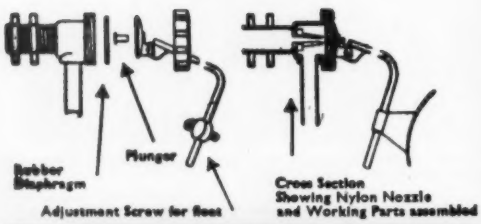
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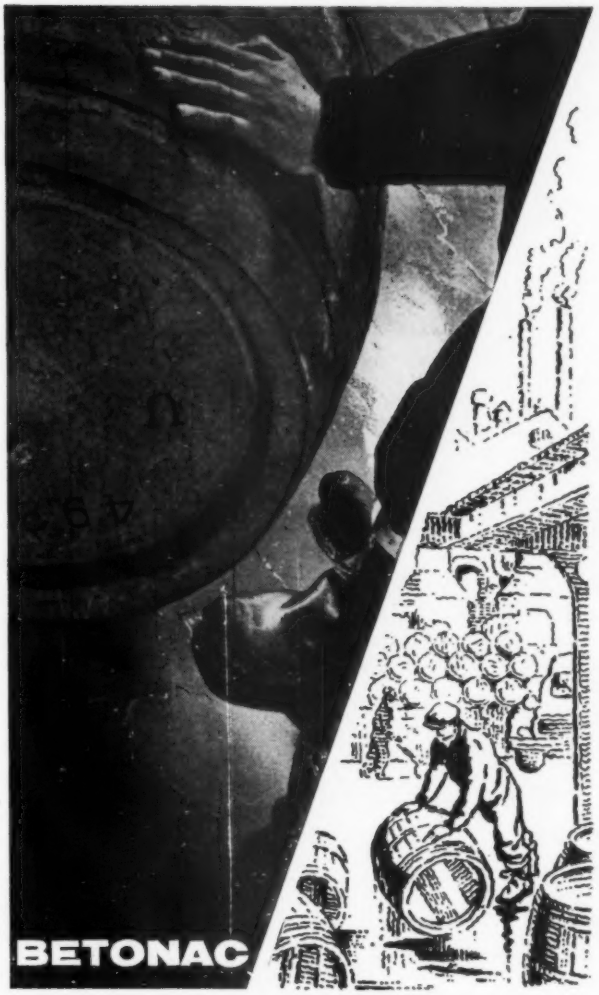
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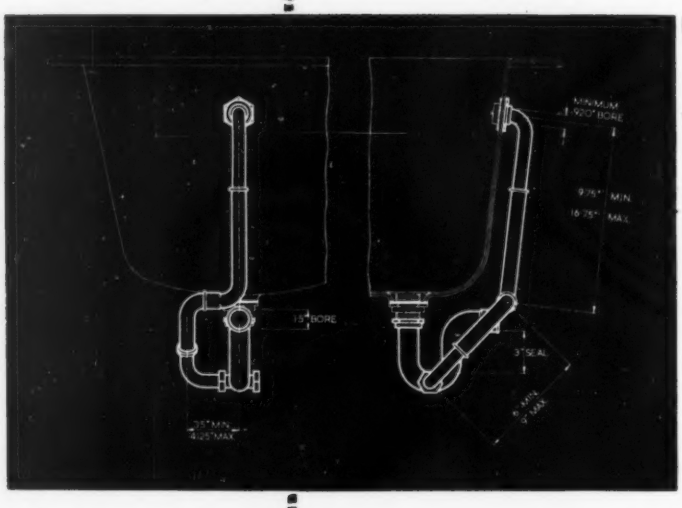
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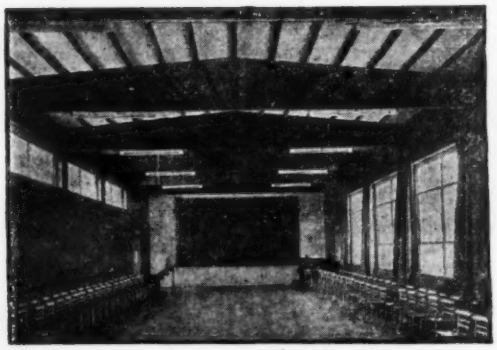
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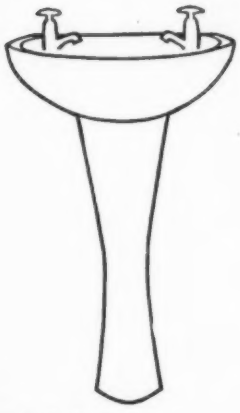
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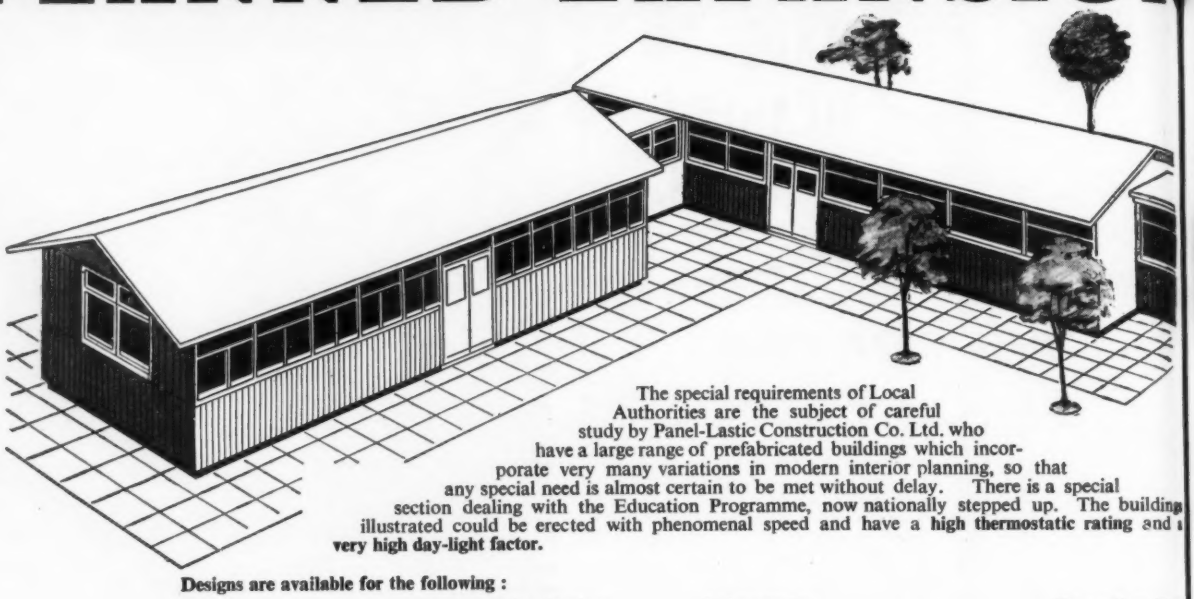
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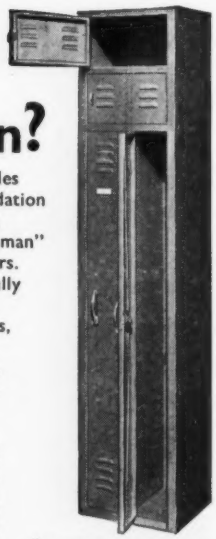
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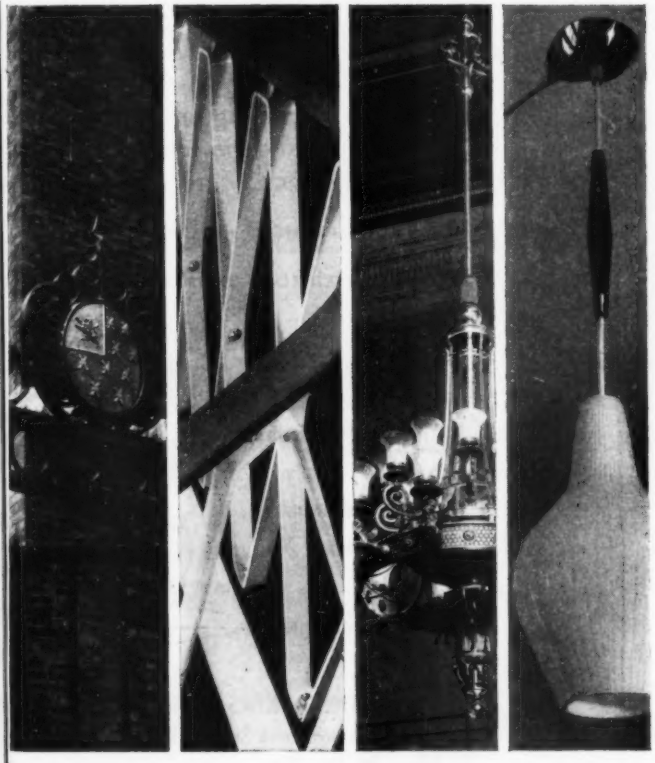
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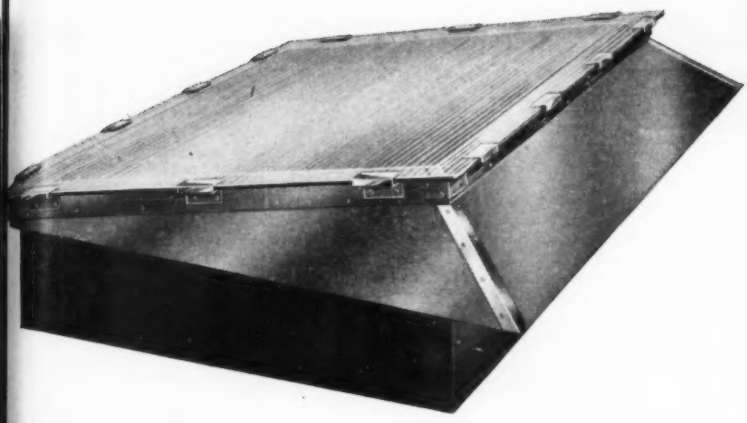


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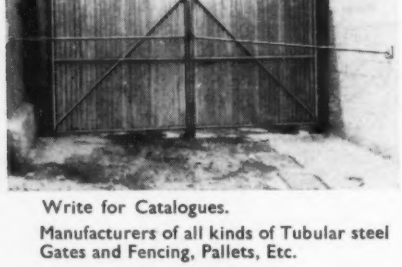
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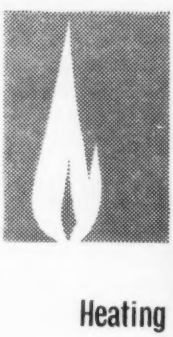
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CLASSIFIED ADVERTISEMENTS

Advertisements should be addressed to the Advt. Manager, "The Architects' Journal," 9, 11 and 13, Queen Anne's Gate, Westminster, S.W.1, and should reach there by first post on Friday morning for inclusion in the following Thursday's paper.

Replies to Box Numbers should be addressed care of "The Architects' Journal," at the address given above.

AIR-MAIL SERVICE available on request:
In response to requests from a number of Overseas subscribers for air-mail delivery of Public and Official Appointment details and Other Appointments Vacant, we have been pleased to arrange that cuttings of all such classified advertisements appearing in the A.J., shall be despatched by air-mail on Wednesday of each week (one day prior to A.J. publication date). The cost of this special service to Overseas subscribers will be 5s. for four weeks (1s. 3d. for each additional week) and prepayment should be sent by subscribers wishing to take advantage of this service. The charge we are making represents only the actual cost of the postage involved.

Public and Official Announcements

35s. per inch; each additional line, 3s.

ARCHITECTS AND BUILDING SURVEYORS
Vacancies in Architect's Department, London County Council, for Architects or Building Surveyors experienced in surveying existing buildings, preparing sketch schemes, working drawings and specifications and supervising works in progress, for the complete internal replanning and modernisation of the older blocks of Council flats (jobs up to £50,000).
Applicants should have initiative, a real interest in this type of work and the ability to act on their own judgment since the maximum opportunity will be afforded for each to carry his own job through from survey to completion. Salaries ranging from £700—£1,135 (under review). Promotion by merit.
Application form from Hubert Bennett, F.R.I.B.A., the Architect to the Council, County Hall, S.E.1, quoting ref. AR/EK/25/60. (210.)
8495

BOROUGH OF ENFIELD
BOROUGH ENGINEER & SURVEYOR'S DEPARTMENT
Applications are invited for the post of ARCHITECTURAL ASSISTANT, Grade A.P.T. I (£610—£765 per annum, plus a London Weighting Allowance of £10—£30 per annum according to age).
Applicants must have had experience in the preparation of plans, specifications, etc., including the maintenance of public buildings.
Saturday mornings are normally free of duty.
Application forms obtainable from H. D. Peake, M.Sc.(Eng.), M.I.C.E., Borough Engineer & Surveyor, 7 Little Park Gardens, Enfield, Middx., returnable to the undersigned.
CYRIL E. C. R. PLATTEN,
Town Clerk.
Public Offices,
Enfield, Middx. 8454

ARCHITECT'S DEPARTMENT,
SALOP COUNTY COUNCIL
Applications are invited from qualified Architects for the post of SENIOR ASSISTANT ARCHITECT on A.P.T. Grade IV (£1,065—£1,220 p.a.). A disturbance allowance or weekly separation allowance will be payable to a married man taking up this appointment. Conditions of service and application forms obtainable from RALPH CROWE, A.A.Dipl., A.R.I.B.A., A.M.T.P.I., COUNTY ARCHITECT, COLUMN HOUSE, LONDON ROAD, SHREWSBURY. Closing date 12th March, 1960. 8621

COUNTY BOROUGH OF WEST HAM
BOROUGH ARCHITECT AND PLANNING OFFICER'S DEPARTMENT
Applications invited for the following posts:
(a) GROUP ARCHITECT: APT IV.
(b) DEPUTY GROUP ARCHITECT (2 posts): Special Grade.
(c) ASSISTANT PLANNING OFFICER: Special Grade.
(d) ARCHITECTURAL ASSISTANT: APT II/ Special Grade.
(e) ARCHITECTURAL ASSISTANT: APT I. (London Weighting in addition.)
Commencing salary according to qualifications and experience.
Application Form and Details from: Thomas E. North, OBE. FRIBA. 70, West Ham Lane, Stratford, E.15, returnable by 14th March, 1960. 8575

OXFORD REGIONAL HOSPITAL BOARD
CONTEMPORARY HOSPITAL BUILDINGS
Architects who wish to work (in association with W. J. Jobson, Regional Architect) on projects in this most interesting field of development are invited to apply for the following permanent posts:—
SENIOR ASSISTANT ARCHITECT, £1,050 to £1,245 per annum.
ASSISTANT ARCHITECT, £730 to £1,055 per annum.
(Salaries are at present under review.)
Previous hospital experience is not necessary. Further particulars may be obtained from the Secretary, 43, Banbury Road, Oxford, and applications, quoting two referees, should be received not later than 18th March, 1960. 8564

WEDNESFIELD URBAN DISTRICT COUNCIL
ENGINEER AND SURVEYOR'S DEPARTMENT
Applications are invited for the position of CHIEF ASSISTANT ARCHITECT at a salary in accordance with A.P.T. Grade IV (£1,065 to £1,220).
Candidates must be qualified and have had considerable experience in the appointment for which they make application.
The district is developing rapidly and offers exceptional experience.
The National Joint Council Conditions of Service will apply and the successful candidate will be required to contribute to a Superannuation Scheme and also undergo a medical examination.
Housing accommodation will be provided, if necessary, and reasonable removal expenses will be paid.
Applications, stating age, qualifications, experience, with the names of two referees, must be received by the undersigned by not later than 4th March, 1960.
J. HENWOOD JONES,
Clerk of the Council.
Council Offices,
Alfred Squire Road,
Wednesfield,
Staffs. 8550

COUNTY BOROUGH OF SOUTHEND-ON-SEA
BOROUGH ARCHITECT'S DEPARTMENT
Applications are invited for the following posts:—
ASSISTANT ARCHITECT, Special Classes Scale (£785 × £40 (6) × £45—£1,070).
TECHNICAL ASSISTANT (Architectural), Grade A.P.T. II (£765 × £25 (1) × £30 (3) —£880).
ASSISTANT QUANTITY SURVEYOR, Special Classes Scale (£785 × £40 (6) × £45—£1,070).
STUDENT HEATING ENGINEER (General Division salary range, £210—£655).
A Flat is available for a suitable candidate.
Candidates must be suitably qualified and experienced.
The appointments will be subject to the provisions of the Local Government Superannuation Acts and the National Joint Council's Scheme of Conditions of Service so far as adopted by the Council. Medical examination.
Applications, stating age, qualifications and experience, with the names of two referees, should be submitted to the Borough Architect, 30, Alexandra Street, Southend-on-Sea, forthwith.
Canvassing will disqualify. Any candidate who is related to member or officer of the Council is required to disclose the fact.
ARCHIBALD GLEN,
Town Clerk.
8511

BOROUGH OF POOLE
APPOINTMENT OF ASSISTANT ARCHITECT, SPECIAL GRADE (£785—£1,070)
Applications are invited for the above appointment. Candidates should have passed the appropriate professional examinations. Starting salary will depend on age and experience.
This is an appointment to deal with a rapidly expanding capital programme, and the work will be interesting and varied, but experience in educational projects would be an advantage.
Application forms from the Borough Engineer, Municipal Buildings, Poole, to be returned to me by Friday, 11th March, 1960.
J. G. HILLIER,
Town Clerk.
8623

CITY OF CANTERBURY
Applications are invited from persons who have passed the Final Examination of the R.I.B.A. for the appointment of an ASSISTANT ARCHITECT, Special Scale (£785—£1,070). Commencing salary according to qualifications and experience.
Applicants should have had good general experience and be capable of preparing accurate working drawings.
Housing accommodation available if required.
Applications, together with the names of two referees, must reach the City Architect & Planning Officer, Mr. John L. Berbiers, F.R.I.B.A., A.M.T.P.I., not later than Thursday, 10th March, 1960.
Canvassing will disqualify.
J. BOYLE,
Town Clerk.
Municipal Buildings,
Canterbury. 8569

GLOUCESTERSHIRE EDUCATION COMMITTEE
GLOUCESTERSHIRE COLLEGE OF ART AT CHELTENHAM AND STROUD
Principal: R. S. G. Dent, RE, ARCA, RWA
Applications are invited for the post of STUDIO INSTRUCTOR on the Staff of the Cheltenham School of Architecture which is now housed in its new premises in the Pittville Pump Room. Applicants should have had some years of professional experience and should hold recognised qualifications. Salary in accordance with the Burnham Technical Scale Grade B £700 × £27/10/- to £1,150 p.a. Plus additions for appropriate training, qualifications, and teaching or office experience. Further information can be obtained from the Principal, Gloucestershire College of Art, St. Margarets Road, Cheltenham, to whom application forms must be returned by Thursday, 17th March, 1960. 8619

CITY OF BIRMINGHAM
DEPUTY CITY ARCHITECT
Applications are invited from suitably qualified Architects for the appointment of Deputy City Architect, at a salary of £2,870 per annum, rising by annual increments of £100 to a maximum of £3,370 per annum.
A memorandum giving details about the scope of the appointment and general conditions may be obtained from the undersigned.
Applications must be received by me not later than 18th March, 1960.
A. G. SHEPPARD FIDLER,
City Architect.
8584

SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD
Applications are invited for the post of (*a*) ASSISTANT ARCHITECT or (*b*) ARCHITECTURAL ASSISTANT or (*c*) DRAUGHTSMAN on the permanent staff of the Board generally in accordance with Whitley Council Conditions of Service.
Applicants for post (*a*) must be Associate members of the Royal Institute of British Architects and capable of preparing working and detailed drawings and specifications and supervising work on individual projects; experience of hospital planning and construction an advantage. The commencing salary will be fixed according to age and experience within the scale £730×£25(2)× £30(2)×£35(5)×£40(1)—£1,055 p.a.
Applicants for post (*b*) must have passed the Intermediate Examination of the R.I.B.A. or equivalent examination; commencing salary within the scale £545 (at age 21)×£20 (3)×£25(4) × £30 (2)—£765 p.a.
Applicants for post (*c*) must have had suitable training, including three years' technical experience in architectural drawing; salary £445 (at age 21) ×£25(5)×£30(3)—£660 p.a.
All the scales quoted are under review and a London Weighting Allowance is payable in addition.
Application forms may be obtained from the undersigned at 40, Eastbourne Terrace, London, W.2, and must be completed and returned by 16th March.
E. G. BRAITHWAITE, *Secretary.*
8761

CITY OF BIRMINGHAM PUBLIC WORKS DEPARTMENT
PLANNING AND REDEVELOPMENT SECTION
Applications are invited for the posts of PRINCIPAL ASSISTANT PLANNING OFFICERS in the Design Office. Their duties will be related mainly to redevelopment projects in the Central Areas.
Candidates must be Corporate Members of the Town Planning Institute. They should have had experience in the preparation and design of Comprehensive Development Areas and experience in landscape design would be an advantage.
Salary in accordance with Salary Scales for Senior Officers—Grade 'B' (£1,305/£1,485 per annum).
Commencing salary will be according to experience and qualifications.
The posts are permanent, superannuable and subject to a medical examination.
Applications stating qualifications, age and experience, and naming two referees, should reach the undersigned by the 2nd April, 1960.
Canvassing disqualifies.
HERBERT J. MANZONI,
City Engineer and Surveyor.
Civic Centre,
Birmingham, 1. 8773

GOVERNMENT OF UGANDA
ASSISTANT TOWN PLANNER
TOWN PLANNING DEPARTMENT
To undertake research into local planning problems, prepare planning schemes for urban and rural areas, and to act in an advisory capacity to Local Authorities and Planning Committees.
Contract appointment. Salary range £1,239—£1,863 a year. Gratuity of 13½% of aggregate emoluments. Free passages. Rented quarters.
Candidates must be A.M.T.P.I., preferably with additional qualification in architecture or engineering.
Write Director of Recruitment, Colonial Office, London, S.W.1, giving full names, age, qualifications and experience quoting BCD 62/9/01/E2. 8779

RUTLAND COUNTY COUNCIL
APPOINTMENT OF ASSISTANT ARCHITECT
Applications are invited for the appointment of Assistant Architect within the Special Scale of £785—£1,070 per annum according to qualifications and experience.
The department is engaged on building programme of new schools and extensions of existing schools and the post offers opportunity of responsibility and interesting work.
The post is subject to the Local Government Superannuation Act, 1937—1953, and the National Scheme of Conditions of Service.
Applications giving full particulars of age, qualifications, and experience, with the names of two referees, should be sent to T. Brian Kennedy, A.R.I.B.A., M.T.P.I., County Architect and Planning Officer, County Offices, Oakham, not later than 14th March, 1960.
A. BOND.
Clerk of the County Council.
County Offices,
Oakham, Rutland. 8770

COUNTY OF ESSEX
BOROUGH OF WALTHAMSTOW
COMMITTEE FOR EDUCATION

Applications are invited for the following appointments in the office of the Education Architect.

(*a*) SENIOR ASSISTANT ARCHITECT, within A.P.T. Grade IV £1,065—£1,220 per annum plus London Weighting.

Applicants should be Associate Members of the R.I.B.A. Experience in school design, construction and contract administration essential.

(*b*) ASSISTANT ARCHITECT, within Special Grade £785—£1,070 per annum plus London Weighting.

Applicants must have passed Parts I and II of the Final Examination of the R.I.B.A. Experience in school design and construction an advantage.

(*c*) ASSISTANT BUILDING SURVEYOR, within A.P.T. Grade II £765—£880 per annum plus London Weighting.

Applicants should hold the R.I.B.A. Building Surveyors Diploma or have passed inter. R.I.C.S. (Building Section) and have had experience in preparing reports, estimates, specifications and supervising repair and maintenance of buildings.

The building programme includes a number of new schools, extensions to and major remodelling of existing schools.

The Council will make up to 100 per cent advances to successful applicants for house purchase in this or adjoining boroughs.

Forms of application to be obtained from and returned to the Borough Education Officer, Town Hall, Forest Road, Walthamstow, E.17, within two weeks of the appearance of this notice. 8783

NORTHAMPTONSHIRE COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT

Applications for the following posts are invited from candidates with the necessary qualifications:—

* TWO SENIOR ARCHITECTURAL ASSISTANTS, APT V (£1,220—£1,375). Applicants must be Associates of the R.I.B.A., with a contemporary approach to architecture, and will be delegated with responsibility for the design and supervision of large building contracts for both Education and other services.

* QUANTITY SURVEYOR, SPECIAL SCALE "A" (£1,210—£1,390). Applicants must be Associates of the R.I.C.S. and have had experience in cost analysis and particularly interim cost control. The successful applicant will take the responsibility of second in command under the Chief Quantity Surveyor for the quantity surveying and accounting sections.

QUANTITY SURVEYOR, APT IV (£1,065—£1,220). Applicants must be Associates of the R.I.C.S. and must be able to prepare bills of quantities for major projects.

HEATING ENGINEERING ASSISTANT, APT II (£765—£880). Applicants must have had experience in the design of schemes and the preparation of drawings and specifications for heating and hot and cold water supplies in schools and other large buildings.

* HEATING CLERK OF WORKS, APT II (£765—£880). Consideration will be given to applicants who have had some experience of site supervision of contracts for heating and allied services and some experience as a contractor's foreman in charge of similar works. The successful applicant will also be required to inspect, test and supervise existing plant for economical operation and to instruct boiler attendants.

* For these posts a car travelling allowance will be payable in accordance with the County Council's approved scale.

A weekly sum of 25s. by way of temporary additional salary will be payable, subject to review quarterly, to a married officer unable to find a house locally.

Details giving age, education, qualifications and experience, with a copy of a recent testimonial, should be sent in an envelope marked "Staff" to the County Architect, County Hall, Northampton, by Tuesday, 22nd March.

J. ALAN TURNER,
Clerk of the County Council.

County Hall,
Northampton. 8765

ISLE OF WIGHT COUNTY COUNCIL
PLANNING ASSISTANT (ARCHITECTURAL) required. Salary A.P.T. Special Grade—£785—£1,070. Permanent post. Candidates should be suitably qualified. Experience in the Planning Department of a local authority essential; preference given to candidates with architectural bias by training or experience.

Applications, on forms obtainable from the Clerk of the County Council, County Hall, Newport, I.W., Closing date 14th March, 1960. 8693

GLENROTHES DEVELOPMENT CORPORATION

ARCHITECT/PLANNER required on grade £1,220 to £1,375 with placing according to qualifications and experience. Applicants should be Associates of R.I.B.A. and T.P.I. with general architectural and planning experience particularly in the field of Civic Design, including the layout of large residential developments, central and industrial areas. Medical examination for entry to the Superannuation Scheme. House to rent available if required. Application forms from the Secretary and Legal Adviser, Glenrothes Development Corporation, Glenrothes, Fife, to be returned by 15th March, 1960. 8752

SHIPLEY URBAN DISTRICT COUNCIL

Applications are invited from appropriately qualified persons for the following appointments within Special Grade (£785—£1,075).

(*a*) ENGINEERING ASSISTANT
(*b*) ARCHITECTURAL ASSISTANT

The posts are superannuable and subject to the provisions of the National Scheme of Conditions of Service; commencing salary according to experience and qualifications. Housing accommodation will be provided if required.

Applications giving age, details of training, qualifications and experence, with the names and addresses of two referees to be sent to the Engineer and Surveyor, Town Hall, Shipley, Yorkshire, by 10 a.m., Thursday, 17th March, 1960.

ERNEST PEARS,
Clerk and Solicitor. 8676

GLOUCESTERSHIRE COUNTY COUNCIL
APPOINTMENT OF ASSISTANT ARCHITECT

Applications are invited for the above appointment in "Career Class" commencing in A.P.T. Grade IV (£1,065—£1,220) progressing to A.P.T. Grade V (£1,220—£1,375) subject to satisfactory report on reaching appropriate incremental point in Grade.

Applicants must have passed the Final Examination R.I.B.A. N.J.C. Service Conditions, Superannuation, Medical Examination.

Applications stating age, present position, salary and date of appointment, details of experience and previous appointments, together with the names and addresses of two persons for reference to reach COUNTY ARCHITECT, SHIRE HALL, GLOUCESTER, by 16th MARCH.

GUY H. DAVIS,
Clerk of the County Council. 8762

LEEDS REGIONAL HOSPITAL BOARD
PROPOSED NEW GENERAL HOSPITAL AT HUDDERSFIELD
CLERK OF WORKS (BUILDING AND STRUCTURAL)

Applications are invited for the appointment of a Temporary Clerk of Works (Building and Structural), in connection with the construction of a new (500 bed, approximate contract value £3,500,000) General Hospital at Huddersfield. Salary £1,200 per annum.

This project will be carried out in consecutive phases under the direction of the Regional Architect, P. B. Nash, A.R.I.B.A., and Messrs. Pite, Son and Fairweather. Preliminary contracts for the formation of the perimeter road and services ring mains and for the work of bulk excavation have been completed. The main building contract is scheduled to start in the immediate future and to continue thereafter for a period of approximately five years.

Applicants must possess a thorough knowledge of all aspects of the building trade and must have had extensive experience as Clerks of Works on multi-storey reinforced concrete framed buildings. Membership of the Institute of Clerks of Works or the possession of the Clerk of Works Diploma of the Association of Building Technicians an advantage.

Previous applicants should re-apply.

Applications, stating age, qualifications, previous experience, together with the names of two Architects to whom reference may be made, to the Secretary, Park Parade, Harrogate, not later than 21st March, 1960. 8694

BOROUGH OF BASINGSTOKE
APPOINTMENT OF
DEPUTY BOROUGH ARCHITECT

This rapidly-growing town is now commencing a scheme of expansion in conjunction with the L.C.C., all housing and architectural works being handled by the Borough Council's Architect's Department.

Applications are invited from Associates, R.I.B.A., who have had first-rate housing experience; salary in accordance with A.P.T. V (£1,220—£1,375); house or flat available; car allowance; N.J.C. conditions; post pensionable; medical examination.

Details giving age, training, experience, etc., and names and addresses of three referees to be sent to the Borough Architect, Eric Almond, Dipl. Arch., A.R.I.B.A., Municipal Buildings, Basingstoke, Hants, by the 23rd March, 1960. Canvassing disqualifies. 8696

COUNTY BOROUGH OF EAST HAM
BOROUGH ENGINEER'S DEPARTMENT

Applications are invited for the following temporary appointment:—

SENIOR ASSISTANT ARCHITECT, Grade IV, £1,065—£1,220.

London weighting is paid in addition, and a salary in excess of the minimum may be paid according to qualifications and experience. The appointment is for work on a new Technical College and is expected to be for a period of not less than three years.

Further details and application forms returnable by 17th March, 1960 from the Town Clerk, Town Hall, East Ham, E.6. 8709

MIDDLESEX COUNTY COUNCIL

ASSISTANT AREA PLANNING OFFICER required (A.P.T. IV, salary £1,095—£1,250). Must have professional qualification and suitable experience. Car allowance normally granted. Application forms from County Planning Officer, 10, Great George Street, S.W.1, returnable by 15th March. (Quote C.32AJ.) 8707

BRITISH RAILWAYS
EASTERN REGION

Applications are invited for the post of ARCHITECTURAL ASSISTANT in the office of the Architect, Eastern Region, British Railways at King's Cross Station.

Applicants should have previous experience in an Architect's office and be taking a recognised course of study with a view to obtaining architectural qualifications. The work of the office provides opportunities to extend experience in design and construction of a variety of interesting buildings.

Modern working conditions; five-day week; rail travel concessions. Salary in accordance with age, qualifications and experience.

Apply in writing to The Architect, Chief Civil Engineer's Department, British Railways, King's Cross Station, London, N.1. 8715

ARCHITECTS
required by
NATIONAL COAL BOARD
EAST MIDLANDS DIVISION

Applications are invited for the following superannuable posts on the staff of the Divisional Chief Architect at 66, Lower Parliament Street, Nottingham.

(*a*) ARCHITECTS:
Grade II, £815 × £30—£1,125.

(*b*) ARCHITECTURAL ASSISTANTS:
Grade I, £715 × £25—£850 (exceptionally £1,000).
Grade II, £595 × £25—£710.

Applicants for (*a*) must be qualified Architects whilst those for (*b*) should preferably have passed the Intermediate R.I.B.A. or have had considerable practical experience.

The programme of work is very varied and provides practical experience of Industrial, Welfare and Domestic Projects.

Applications giving details of age, qualifications and experience to Divisional Chief Staff Officer, National Coal Board, East Midlands Division, Sherwood Lodge, Arnold, Nr. Nottingham. 8715

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT
NEW SECTION FOR NEW TOWN DEVELOPMENT

A new section is being set up to prepare outline proposals for the L.C.C. New Town.

PLANNING ASSISTANTS with architectural, engineering or economics background required for short-term, original and interesting work. Later opportunities for careers for those interested. Up to £1,135 (under review) in accordance with qualifications and experience.

Application form, and further particulars from Hubert Bennett, F.R.I.B.A., Architect to Council, EK/27/60, County Hall, S.E.1. (270.) 8737

WOKING U.D.C.
ARCHITECTURAL ASSISTANT, A.P.T. II
(£765—£880)

Applicants for this appointment in Architectural Section of Engineer & Surveyor's Department, must be Students R.I.B.A. with good general experience.

Appointment offers competent assistant experienced in preparation working and detailed drawings, excellent opportunity engagement on variety of architectural projects.

Housing accommodation if required.

Casual user car allowance.

Application forms from Engineer & Surveyor. Closing date 14th March, 1960. 8718

CHERTSEY URBAN DISTRICT COUNCIL
APPOINTMENT OF ARCHITECTURAL ASSISTANT

Architectural Assistant or learner required in Surveyor's Department. Salary from £210 to £880 according to experience. Details and application form from Engineer & Surveyor, "The Orchard," Staines Lane, Chertsey, Surrey.

N. C. GOLDSMITH.
Engineer & Surveyor. 8727

WELSH COLLEGE OF ADVANCED TECHNOLOGY
CATHAYS PARK, CARDIFF
(Associated with the University of Wales)
WELSH SCHOOL OF ARCHITECTURE

Applications are invited for the post of Head of the Welsh School of Architecture. The School is a major department of the College which is associated with the constituent colleges of the University of Wales for the provision of courses leading to the degree of B.Arch. (Wales). The School is recognised by the Royal Institute of British Architects which grants exemption from its examinations to graduates and diplomates of the School.

Applicants should be well qualified Architects, being graduates of a British University or having equivalent qualifications and should have had good teaching and professional experience.

The salary will be in accordance with Grade VI of the Burnham Report, *i.e.* £2,250 × £50—£2,500 per annum.

Forms of Application, together with further particulars, may be obtained from the Principal and should be returned to him as soon as possible.

ROBERT E. PRESSWOOD.
Clerk to the Governors.

City Hall,
Cardiff. 8745

mended Advertisement
WEST SUSSEX COUNTY COUNCIL
COUNTY ARCHITECT'S DEPARTMENT
Applications are invited for the following appointment:—
CHIEF HEATING, MECHANICAL, ELECTRICAL ENGINEER, at a salary in accordance with Scale B (£1,265 × £55 (4)—£1,485). Commencing salary will be according to experience.
Further particulars should be obtained from the County Architect, County Hall, Chichester, to whom all detailed applications must be submitted not later than 4th April, 1960.
T. C. HAYWARD,
Clerk of the County Council.
County Hall,
Chichester. 8717

mended Advertisement
BOROUGH OF WARWICK
APPOINTMENT OF
SENIOR ARCHITECTURAL ASSISTANT
Applications are invited for a Senior Assistant to work immediately under the Chief Architectural Assistant in the Borough Surveyor's Department. Salary A.P.T. III (£880—£1,065), entry in the scale according to qualifications and experience. The position is permanent and subject to medical examination. Housing accommodation will be provided if necessary and removal expenses paid.
Applicants must have passed at least the Finals of the R.I.B.A.
The post offered is for the design and site supervision of large Housing Estate Development incorporating shops, multi-storey flats, etc.
Applications stating age, qualifications, experience and the names and adresses of two referees should be sent to the Borough Surveyor, 5, Jury Street, Warwick, not later than Monday the 21st March, 1960.
HECTOR SETON BROWN,
A.M.I.C.E., A.M.I.W.E.,
Borough Engineer & Surveyor.
5, Jury Street,
Warwick.
22nd February, 1960. 8733

EAST ANGLIAN REGIONAL HOSPITAL BOARD
SENIOR ASSISTANT ARCHITECTS—salary £1,050—£1,245.
ASSISTANT ARCHITECTS — salary £730—£1,055; additional increments within scale based on experience and age may be granted.
Candidates for above posts must be qualified and registered architects by examination.
ARCHITECTURAL ASSISTANTS—salary £545 (at 21 or over)—£765; commencing figure may be fixed at point above minimum but will not exceed £630. Candidates must have passed intermediate examination of R.I.B.A.
These appointments are for work on major development schemes and offer considerable scope for gaining experience on large scale hospital projects. Salary scales are under review. Applications stating age, qualifications, experience and details of present position (salary, etc.) with names of three referees to Secretary of Board, 27 Chesterton Road, Cambridge, by 18th March, 1960. 8764

NORTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD
SENIOR ASSISTANT ARCHITECTS—Salary £1,100—£1,295—Scales under review. (New entrants commence at minimum.) Applicants must be registered Architects having passed the requisite examinations and must be good designers, capable of preparing working drawings and specifications for, and undertaking site supervision of, all types of building projects. The Board is engaged in an expanding programme of hospital development and the appointments offer exceptional opportunities of gaining experience in designing and supervising the construction of hospital buildings.
Own car may be used for visiting hospitals, etc., for which adequate mileage allowance paid. Posts pensionable and excellent prospects of promotion. Previous hospital experience is NOT essential. Application forms from Secretary, North East Metropolitan Regional Hospital Board, 40, Eastborne Terrace, W.2. 8766

BOROUGH OF EDMONTON
BOROUGH ARCHITECT'S DEPARTMENT
QUANTITY SURVEYING ASSISTANT
Candidates should have passed the Intermediate examination of the Royal Institute of Chartered Surveyors. Time off and financial assistance for study. Five-day week. Salary within rate A.P.T. II £765—£880 per annum plus London weighting £10—£30 according to age.
Applications on forms obtainable from the Town Clerk, Town Hall, Edmonton, must be delivered by the 19th March, 1960. 8768

COUNTY BOROUGH OF ROCHDALE
BOROUGH SURVEYOR'S DEPARTMENT
Applications are invited from suitably qualified persons for (1) ASSISTANT ARCHITECT, (2) QUANTITY SURVEYOR, in both cases on Special Classes scale (£785—£1,070 p.a.).
The Corporation make 100% loans for house purchase in approved cases.
Applications stating age, qualifications, experience and names of two referees to Borough Surveyor, Town Hall, Rochdale, by 19th March.
Canvassing will disqualify. Relationship to a member or senior official of the Council must be disclosed. Appointments subject to medical examination. 8772

CHISLEHURST AND SIDCUP URBAN DISTRICT COUNCIL
APPOINTMENT OF ARCHITECTURAL ASSISTANT
Architectural Assistant required in Engineer & Surveyor's Department. Salary A.P.T. II (£765—£880 p.a.) plus London weighting. Preference to candidates with R.I.B.A. (Inter) Examination. Housing accommodation available.
Applications, giving age, training, qualifications and experience and names of two referees, to Clerk, Council Offices, Sidcup Place, Sidcup, by 18th March, 1960. 8782

INVESTIGATOR: ROYAL COMMISSION ON ANCIENT AND HISTORICAL MONUMENTS OF SCOTLAND. Pensionable post in Edinburgh for man or woman at least 22 and under 30 on 1.3.60 (with extension for regular Forces Service and Overseas Civil Service). Candidates should normally have a degree in architecture or have achieved A.R.I.B.A., but others with qualifications and experience of special value may be considered. Experience of descriptive writing and interest in history of architecture an advantage. Selection by interview in Edinburgh. Salary scale (men) £635—£1,120. Starting salary may be above minimum. After an appropriate qualifying period promotion to Senior Investigator (salary scale £1,210—£1,600) may be expected. Write Civil Service Commission, Burlington Gardens, London, W.1, for application form quoting 5112/60. Closing date 24th March, 1960. 8774

ADMINISTRATIVE COUNTY OF LEICESTER
(*a*) SENIOR ASSISTANT ARCHITECT £1,075 £1,220.
(*b*) ASSISTANT ARCHITECT £785—£1,070.
Candidates for (*a*) must be chartered members of the R.I.B.A., have had considerable experience and be capable of taking charge of contracts from inception to completion: for (*b*) must have passed Parts I and II of the R.I.B.A. final and be capable of executing working drawings.
Lodging allowance and removal expenses may be paid to a married man.
Apply to County Architect, 123 London Road, Leicester. 8763

AIR MINISTRY Works Designs Branch requires in LONDON and Provinces, ARCHITECTURAL ASSISTANTS with adequate training and drawing office experience. O.N.C. (Building) an advantage. Work includes site layouts, sketch plans, working drawings and details for variety of technical and domestic buildings in permanent and semi-permanent construction. Financial assistance and time off given for recognised courses of study. Promotion and pension prospects. Five-day week with 18 working days leave per year initially. Overseas tours for which special allowances granted. Salary in LONDON ranges from £680 (age 25) to £900 p.a. for men; from £673 to £868 p.a. for women; somewhat lower in PROVINCES. Commencing salary dependent on age, qualifications and experience. Applicants who must be natural-born British subjects, should write to Air Ministry, W.G.c., Lacon House, Theobalds Road, London, W.C.1, or to any Employment Exchange (quoting Order No. Kings Cross 3744 giving age, details of training, qualifications, full particulars of former posts held and copies of any testimonials). Candidates selected will normally be interviewed in London and certain expenses reimbursed. 7498

COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE
OFFICE OF THE COUNTY ARCHITECT
The Council require SENIOR ARCHITECTS in salary grades A.P.T. IV (£1,065—£1,220) and Special Grade (£785—£1,070) for their extensive and interesting building programme which includes schools, colleges, old people's and children's homes, clinics, ambulance, fire and police stations, and other public buildings. Architects appointed will be employed at the Central Office in Wakefield solely upon capital works dealing with building projects from sketch plans to completion.
Applications are also invited for the undermentioned posts at the Central Office:—
JUNIOR ARCHITECTURAL ASSISTANTS
Grade A.P.T. II (£765—£880).
Grade A.P.T. I (£610—£765).
Applications to be submitted as soon as possible on forms to be obtained from and returned to the undersigned.
A. W. GLOVER, F.R.I.B.A.,
County Architect.
Bishopgarth,
Westfield Road,
Wakefield. 6607

CORPORATION OF LONDON
CITY PLANNING OFFICE requires DRAUGHTSMAN, salary scale (£655-£1,025), in Civic Design Section.
This Section is engaged in design of large scale redevelopments in the City (*e.g.*, Barbican, Tower Hill), and of smaller redevelopment schemes, as well as in preparing surveys and plans for leases, conveyances inquiries and appeals and in work arising out of Town and Country Planning (Control of Advertisements) Regulations.
Applicants should be neat, expeditious and versatile draughtsmen, with an architectural background.
Local Act superannuation. Medical examination.
Applications, with details of age, training and experience, and copies of two recent references, to City Planning Officer, Guildhall, London, E.C.2, within 14 days. 8786

COUNTY BOROUGH OF BLACKBURN
CENTRAL AREA RE-DEVELOPMENT
In connection with this scheme applications are invited for the following posts.
Architectural
SENIOR ARCHITECTURAL ASSISTANT. Grade Scale "A." £1,235 to £1,420.
ARCHITECTURAL ASSISTANT. Grade A.P.T. 4. £1,065 to £1,220.
ARCHITECTURAL ASSISTANT. Grade A.P.T. Special. £785 to £1,070.
ARCHITECTURAL ASSISTANT. Grade A.P.T. 2. £765 to £880.
Candidates must have the necessary qualifications and experience relative to the Grade. Housing accommodation will be available if required.
Application forms (from the Borough Engineer, Town Hall, Blackburn) are to be returned by 17th March.
FRANK SQUIRES,
Town Clerk. 8785

ALDRIDGE URBAN DISTRICT COUNCIL
ASSISTANT ARCHITECT
Applications are invited for this appointment on Grade A.P.T. II, III or Special; starting point dependent on qualifications and experience; Special Grade for Final R.I.B.A. only; A.P.T. III for part Final qualifications.
Applicants must be capable of preparing and supervising schemes in the Council's Housing programme.
Housing accommodation will be provided and the candidate's removal expenses paid.
The Urban District has a current annual capital works programme of approximately £1,000,000. Housing programme: 1958, 400 houses completed, target: future programme 550 dwellings.
Aldridge is expanding by approximately 3,000 persons per annum: estimated present population 47,500. School facilities are excellent.
H. G. G. NICHOLS,
Clerk of the Council.
Council House,
Aldridge,
Staffs. 8746

HUNTINGDONSHIRE
COUNTY ARCHITECT'S DEPARTMENT
ARCHITECTURAL ASSISTANT
Special Grade, £785—£1,070
Applications are invited for the above appointment. The successful applicant will become a member of an architectural team engaged in projects of varying size. It is desired that the person appointed shall be keenly interested in architecture with an up-to-date approach to both planning and design.
Application forms may be obtained from S. M. Holloway, A.R.I.B.A., County Architect, County Buildings, Huntingdon, and completed forms should be returned to the undersigned by 14th March, 1960.
A. C. AYLWARD,
Clerk of the County Council.
County Buildings,
Huntingdon. 8680

BIRMINGHAM TAME AND REA DISTRICT DRAINAGE BOARD
ENGINEER'S STAFF
ARCHITECTURAL ASSISTANT
Applications are invited for the appointment of Architectural Assistant on the staff of the Engineer to the Board, Rookery Park, Erdington, Birmingham, 24. The post is subject to one month's notice on either side, and the passing of a medical examination, the provisions of the Local Government Superannuation Acts and the undermentioned terms of employment. There is a possibility of housing being made available. Previous local authority experience is not necessary.
Permanent post at a commencing salary within A.P.T. Grade IV (£1,065 × £55 × £50 (2) × £1,220). Intermediate R.I.B.A. examination diploma as a minimum qualification and applicants must be capable architectural draughtsmen with a sound knowledge of building construction. Ability to prepare working drawings is essential. Some knowledge of specifications and bills of quantities is desirable.
Applications, accompanied by the names and addresses of two referees, giving particulars of age, qualifications and experience, should reach the undersigned not later than Monday, 14th March, 1960.
ARTHUR J. WRIGHT,
Clerk to the Board.
Clerk's Office,
Lombard House,
Great Charles Street,
Birmingham, 3.
19th February, 1960. 8647

CITY OF CHESTER
DEPARTMENT OF CITY ENGINEER
Applications are invited for the post of SENIOR ARCHITECTURAL ASSISTANT. Salary within the A.P.T. Special Grade Scale. Candidates should have passed the R.I.B.A. Final Examination and should have had good training and general experience. Housing accommodation will be available to the successful applicant if required. Applications, with two recent testimonials, should reach the City Engineer, 49, Northgate Street, Chester, by 18th March, 1960. 8750

GOVERNMENT OF TANGANYIKA
TOWN PLANNING OFFICER, TOWN PLANNING DEPARTMENT

To design detailed schemes of the layout and subdivision of public land. To prepare planning schemes for local authorities and to advise the Town and Country Planning Board. Experience in the administration of Planning Law and Regulations would be an advantage.

Contract appointment. Salary range £1,239-£1,863 a year. Gratuity of 13½% of aggregate emoluments. Rented quarters. Free passages. Candidates, aged 30-45, must be A.M.T.P.I. with at least five years' experience and possess professional qualification in architecture, surveying or engineering. Write Director of Recruitment, Colonial Office, London, S.W.1, giving full names, age, qualifications and experience, quoting BCD 62/8/01/E2. 8747

ROBERT GORDON'S TECHNICAL COLLEGE, ABERDEEN
SCOTT SUTHERLAND SCHOOL OF ARCHITECTURE
Head—E. F. DAVIES, B.Arch. (Lvpl.), F.R.I.B.A., F.R.I.A.S.

Applications are invited for the post of LECTURER and STUDIO INSTRUCTOR in Architectural Design and Constructional Subjects.

The College is recognised for purposes of exemption from the R.I.B.A. Intermediate and Final Examinations.

Candidates must be Associates of the Royal Institute of British Architects and should possess the Degree or Diploma of a Recognised School of Architecture.

Salary Scale:—£700 per annum × £35 to £805 per annum × £40 to £1,125 per annum + 5%, with initial placing according to qualifications and experience. The salary scale is under revision.

Further particulars and forms of application may be obtained from the undersigned, to whom completed applications should be returned on or before March 19th, 1960.

A. C. WEST,
Director.
8749

METROPOLITAN BOROUGH OF HAMPSTEAD

Applications are invited for the following permanent appointments in the Borough Engineer's Department.

PLANNING AND BUILDING ACTS ASSISTANTS

(1) Grade A.P.T. III/IV—£880 to £1,220 plus London weighting.

(2) Special Grade—£785 to £1,070 plus London weighting.

Candidates should have had considerable experience in the administration of planning and building acts, preferably in the Metropolitan Area, and should possess one of the following qualifications: A.M.T.P.I., A.M.I.Mun.E., A.R.I.C.S., A.R.I.B.A., or be otherwise qualified in accordance with the Charter. Medical examination is required. Housing cannot be provided.

Applications with full details and names of three referees should be forwarded to the Town Clerk (A.J.), Town Hall, Haverstock Hill, N.W.3, by Wednesday the 16th March. 8678

ARCHITECTURAL ASSISTANTS REQUIRED BY MINISTRY OF WORKS

For employment in London and Provinces.

Keen and enthusiastic Assistants of Intermediate R.I.B.A. standard are required for the design of interesting and varied types of buildings in all parts of the world.

The salary range is from £570 (at age 21) to £900, London (slightly less elsewhere). Starting pay according to age and experience.

Five-day week. 3½ weeks leave annually.

Good prospects of promotion and permanency. Permanent posts are pensionable and the pension scheme is non-contributory.

Apply, giving details of age, training and experience, to: E. Bedford, Esq., C.B., C.V.O., A.R.I.B.A., Chief Architect, Ministry of Works, (A), Abell House, Room 427, John Islip Street, London, S.W.1. Interviews will be held at the above address and at Regional offices where possible. 8661

CORBY DEVELOPMENT CORPORATION
ASSISTANT ARCHITECTS

There are vacancies on the staff of the Chief Architect for Assistant Architects.

The appointments will be made within A.P.T. Grade III (£880—£1,065) or IV (£1,065—£1,220). The grade and the commencing salary within the grade will depend upon qualifications and experience.

Candidates must be qualified A.R.I.B.A. or must have passed the Final examination of the R.I.B.A. or equivalent examination recognised by the Architects Registration Council.

Appointments are subject to Superannuation under the Local Government Superannuation Scheme.

Housing is available. Removal expenses paid.

Applications stating age, education, training, qualifications, experience, appointments held and salaries, together with the names of two referees must reach the undersigned by Monday, 14th March, 1960.

R. F. BROOKS GRUNDY,
General Manager.
Spencer House,
Corby, Northants. 8662

MIDDLESEX COUNTY COUNCIL

(1) SENIOR PLANNING ASSISTANT, Special Scale, £785—£1,070. (Appointment may be made above the minimum in this case.) Development Plan and Research Duties. Candidates should have Town Planning experience and an appropriate qualification.

(2) TOWN PLANNING ASSISTANTS, A.P.T. II, £765—£880, for either Survey and Analytical work or Development Control. Preference for candidates holding professional qualification or a good Honours degree in appropriate subjects.

(3) TOWN PLANNING ASSISTANT (TREES), A.P.T. II. Preparation of planting schemes, tree preservations. Suitable qualification in Forestry, Arboriculture, or Landscape Architecture an advantage.

London weighting up to £30 payable in addition to salaries quoted. Prescribed conditions. Application forms from County Planning Officer, 10, Great George Street, London, S.W.1, returnable by 13th March. (Quote B.997AJ.) 8664

TOWN PLANNING
KUMASI COLLEGE OF TECHNOLOGY, GHANA

Applications are invited for the post of LECTURER IN TOWN PLANNING in the School of Architecture, Town Planning and Building.

Applicants should hold an Associate Membership of the Town Planning Institute or an equivalent qualification. The successful candidate will be required to teach students preparing for the examinations of the Town Planning Institute.

Contract appointments are normally for five years, and may be renewed. Three months' notice of resignations of an appointment is required.

The contract salary scale is £1,295 × £70—£2,275 per annum.

A gratuity at the rate of £150 a year is payable at the end of a contract period. Children's allowances are paid up to a maximum of three.

The College is fully residential, and members of staff are housed in pleasant, modern bungalows on the spacious campus; climate and living conditions are good.

Application forms and an Information Brochure may be obtained from the Assistant Registrar, Reference AJ/A, Kumasi College of Technology, 29, Tavistock Square, London, W.C.1, who will also be glad to answer any question about this appointment. The Principal of the College will be in London to interview candidates for this post in April. 8665

BOROUGH OF SOLIHULL
APPOINTMENT OF ASSISTANT ARCHITECTS

Following a review of the establishment of the Architects Section of the Borough Surveyor's Department, applications are now invited from architects having suitable experience for appointment as Assistant Architects, at a salary in accordance with A.P.T. Grade IV—(£1,065 per annum rising by annual increments of £50 and £55 to a maximum of £1,220 per annum).

Solihull has a population of approximately 90,000 and is still expanding rapidly. It is seeking County Borough status and is an Excepted District under the Education Acts. It has approximately £260,000 of education building under construction at the present time. The 1960/61 programme includes work of approximately £380,000 in value and the future programme includes new primary and secondary schools, nursery schools, extensions and adaptations, and a considerable number of minor capital works.

In suitable cases housing accommodation will be provided as soon as possible and half removal expenses paid.

The appointment is subject to the provisions of the Local Government Superannuation Acts, to the National Scheme of Conditions of Service and to one month's notice on either side.

Applications, giving full particulars as to present and past appointments, experience and qualifications held, should be submitted to the Borough Surveyor, 90, Station Road, Solihull, so as to reach him not later than 15th March, 1960.

W. MAURICE MELL,
Town Clerk.
The Council House,
Solihull,
Warwickshire. 8681

CHESTERFIELD RURAL DISTRICT COUNCIL
ASSISTANT ARCHITECT GRADE I SPECIAL SCALE
(£610—£1,070 per annum)

Applications are invited for the above appointment in the Department of the Engineer and Surveyor, the commencing salary and grade being determined by qualifications and experience. The Department has an interesting variety of work in hand.

Special Scale—candidates with Final R.I.B.A. examination or equivalent.

A.P.T.I. or II—candidates with Inter R.I.B.A. examination or equivalent.

The Council are prepared to assist with housing accommodation and pay removal expenses. A casual user car allowance may be granted in certain cases. Alternate Saturday mornings are free.

Applications stating age, qualifications, present and past appointments, experience, etc., together with the names of two referees should reach the undersigned not later than 12th March, 1960.

H. O. HAWKINS,
Clerk of the Council.
Rural Council House,
Saltergate,
Chesterfield. 8690

ASSISTANT ARCHITECTS required in Office of Architect, Waterloo Station. Applicants must have had good comprehensive experience in design and construction of buildings of various types with emphasis on modern structural techniques. Associate Membership of the R.I.B.A. essential. Salary on scale £943—£985 per annum. Free and other travel facilities. Superannuation Fund. Five-day week. Apply, giving details of experience and qualifications to Chief Civil Engineer, British Railways (Southern Region), Waterloo Station, S.E.1. 8657

QUANTITY SURVEYING
KUMASI COLLEGE OF TECHNOLOGY, GHANA

Applications are invited for the post of LECTURER IN QUANTITY SURVEYING in the School of Architecture, Town Planning and Building. Applicants should be Professional Associates of the Royal Institution of Chartered Surveyors (Quantity Surveying) and will be required to teach Quantity Surveying Estimating and Valuation for the examinations of the R.I.B.A. and of the I.O.B. Teaching and/or post-qualification professional experience is essential.

Contract appointments are normally for five years, and may be renewed. Three months' notice of resignation of an appointment is required.

The contract salary scale is £1,202 10s. × £65—£2,112 10s. p.a.

A gratuity at the rate of £150 a year is payable at the end of a contract period. Children's allowances are paid up to a maximum of three.

The College is fully residential, and members of staff are housed in pleasant, modern bungalows on the spacious campus; climate and living conditions are good.

Application forms and an Information Brochure may be obtained from the Assistant Registrar, Reference AJ/D, Kumasi College of Technology, 29, Tavistock Square, London, W.C.1, who will also be glad to answer any questions about this appointment. The Principal of the College will be in London to interview candidates for this post in April. 8666

COUNTY BOROUGH OF GATESHEAD

Applications invited for the following posts in the Borough Surveyor's Department to work under the Chief Architect upon an interesting programme of schools, housing (including multi-storey flats) and public buildings:—

(*a*) JUNIOR ARCHITECTURAL ASSISTANTS A.P.T. I-III (£610—£1,065).

(*b*) ARTICLED PUPILS, on General Division (£210—£595) according to age.

(*c*) ASSISTANT QUANTITY SURVEYOR, Special Grade (£785—£1,070).

(*d*) JUNIOR QUANTITY SURVEYORS, A.P.T. I—III (£610—£1,065).

(*e*) LEARNER QUANTITY SURVEYORS, General Division (£210—£595) according to age.

Salaries within the above scales (except (*b*) and (*e*)) according to qualifications and experience. Local Government experience not essential.

Posts pensionable, subject to medical examination and one month's notice.

Details and application forms (returnable within 14 days of this advertisement) from the Borough Surveyor, Swinburne Street, Gateshead.

C. D. JACKSON,
Town Clerk.
Town Hall,
Gateshead, 8. 8682

BOROUGH OF NEWCASTLE-UNDER-LYME

Requires:

(*a*) ASSISTANT ARCHITECT Special Grade. Salary £785 to £1,070 per annum.

(*b*) ARCHITECTURAL ASSISTANT Grade A.P.T. II. Salary £765 to £880 per annum.

Applicants for (*a*) are required to have passed Parts 1 and 2 of the R.I.B.A. Final or Special Final Examinations.

Applicants for (*b*) should have passed the R.I.B.A. Intermediate Examination.

Commencing salaries will be in accordance with qualifications and experience.

Favourable consideration will be given to the provision of housing accommodation in suitable cases.

Applications should be made to the Borough Surveyor, Lancaster Building, High Street, Newcastle, Staffs, and must be returned to him not later than Monday, 14th March, 1960.

C. J. MORTON,
Town Clerk.
8683

LANARK COUNTY COUNCIL

Applications are invited from qualified ARCHITECTS for vacancies on the following grades within the County Architect's Department at Motherwell:—

(*a*) SENIOR ASSISTANTS—Salary scale £1,197-£1,260.

(*b*) ARCHITECTURAL ASSISTANTS—Salary scale £1,040—£1,120.

(*c*) ARCHITECTURAL ASSISTANTS—Salary scale £795—£1,075.

Applicants for all posts should be A.R.I.B.A. Employment in these capacities offers wide scope in development of modern building programme.

Medical Examination. Superannuation. No canvassing.

Applications stating age, qualifications and experience together with names and addresses of three referees should be lodged with County Clerk, P.O. Box No. 1, Glasgow, within 14 days of advertisement. 8684

BOROUGH OF EDMONTON
ARCHITECTURAL ASSISTANT

Applications are invited for the appointment of an Architectural Assistant (Temporary), Grade A.P.T. IV, £1,065—£1,220 plus London Weighting. Candidates should have passed the final examination of the Royal Institute of British Architects or equivalent examination, recognised by the Architects Registration Council and should be experienced in the construction of multi-storey flats and public buildings.

Applications on forms obtainable from the Town Clerk, Town Hall, Edmonton, N.9, must be delivered by the 12th March, 1960. 8648

LINDSEY (LINCOLNSHIRE) COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Owing to reorganisation of the Department to cope with large and interesting programme of work, the following vacancies occur:—

(*a*) ARCHITECTURAL ASSISTANTS, Grade A.P.T. III, £880—£1,065.
(*b*) ENGINEERING ASSISTANT, Grade A.P.T. III, £880—£1,065.
(*c*) QUANTITY SURVEYING ASSISTANT, Grade A.P.T. II, £765—£880.
(*d*) QUANTITY SURVEYING ASSISTANT, Grade A.P.T. I, £610—£765 or Miscellaneous III, £525—£590.
(*e*) AREA CLERK OF WORKS, Grade A.P.T. II, £765—£880.

Applicants for (*a*) experienced with a sound knowledge of construction to complete the middle section of a team; (*b*) qualified by experience or graduate I.H.V.E. and able to prepare designs for heating schemes; (*c*) preferably Intermediate R.I.C.S. and able to abstract and take off for smaller jobs; (*d*) grade offered according to experience but applicants must be able to abstract; (*e*) to take charge of area centred on Skegness and be responsible for supervision of major schemes and many minor schemes.

Commencing salary within the grade dependent upon experience. N.J.C. Conditions of Service. Canvassing will disqualify. Candidates must disclose in writing whether to their knowledge they are related to any Member or Senior Officer of the Council.

Applications giving age, qualifications, experience, present post and salary, and the names of two persons to whom reference can be made to be sent to the County Architect, County Offices, Lincoln, not later than 15th March, 1960. 8673

CIVIL SERVICE
QUANTITY SURVEYORS AND ASSISTANT QUANTITY SURVEYORS

required by several Government Departments. Posts in London, provinces and occasionally overseas. London salaries for suitably qualified and experienced men over 25 years of age, range from £830 to £1,300 per annum. QUANTITY SURVEYING ASSISTANTS and others having some experience in Quantity Surveying at salaries ranging from £387 10s. to £900 per annum also required. Prospects of promotion and pensionable status. Write for particulars of vacancies in each department and forms quoting J.Q.S. to Ministry of Labour, Technical and Scientific Register, 26, King Street, London, S.W.1. 8669

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

Applications invited for following senior positions:—

1. ASSISTANT ARCHITECT, General Division, scale £1,850—£2,150. Very varied programme provides interesting opportunity for an architect with organising ability who will be deputy to Architect-in-Charge of the Division. Programme includes factories, warehouses, training colleges, student hostels, homes for old people, expansion of five towns, furniture and exhibition design. Ref. No. AR/EK/30/60.

2. ASSISTANT SENIOR ARCHITECT (Development) in Housing Division. Scale £1,535—£1,915. Duties include responsibility for: (i) Research and development in connection with planning, constructional and component standards of mainly high density housing. (ii) Control of small group engaged in experimental schemes. (iii) Research into Cost Planning methods in collaboration with Principal Quantity Surveyor. (iv) Direction of Materials and Information Section.

Ref. No. AR/EK/31/60.

Further particulars and application form, returnable by 25th March, 1960, from Hubert Bennett, F.R.I.B.A., Architect to the Council, County Hall, S.E.1. (404) 8672

WORTLEY RURAL DISTRICT COUNCIL
APPOINTMENT OF SENIOR ASSISTANT ARCHITECT

Applications are invited for this appointment at a commencing salary in the range £785 rising to £1,070 per annum.

Housing accommodation is available if required.

Applicants should submit their application in writing to the undersigned, with the names of two persons to whom reference may be made.

There is a considerable amount of interesting work in the Department and the successful applicant will be given many and varied opportunities. Applications to be delivered not later than Monday, 14th March, 1960.

ADRIAN M. KELLY,
Clerk.

Council Offices,
Grenoside,
Nr. Sheffield. 8643

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ASSISTANTS required for busy Architect's City office; Laboratory and Industrial projects. Intermediate standard or above. Apply to: Secretary, Fairtlough and Morris, Tempie Chambers, Temple Avenue, E.C.4. FLE. 6296. 8438

RONALD WARD & PARTNERS have immediate vacancies for **ASSISTANT ARCHITECTS** with initiative and some experience, for interesting, commercial, industrial and civic projects. Salaries commensurate with ability. Apply, 39, Chesham Place, S.W.1. BELgravia 5361. 5638

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ARCHITECTURAL ASSISTANT required, with at least two years' office experience. Apply in writing to Thomas Mitchell & Partners, 20, Bedford Square, London, W.C.1. 7282

INTERMEDIATE standard ASSISTANTS required, minimum two years' office experience. Minimum salary £750 according to ability. Theo. H. Birks, 38, Portland Place, W.1. LAN. 7236. 7127

SEELY AND PAGET have an immediate vacancy in their City Office for an experienced and responsible ASSISTANT. Salary range £842×£52(4)—£1,050. Write: 41, Cloth Fair, E.C.1, or Telephone: MET 8511. 8208

ARCHITECTURAL ASSISTANTS of Final and Intermediate standard required for work on industrial buildings. Excellent opportunities in an expanding London office. Apply, stating age, experience and salary range, to the Chief Architect, Nuclear Civil Constructors, 52/55, Carnaby Street, London, W.1. 7480

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JOHN & SYLVIA REID require an assistant ARCHITECT aged between 25 and 35, with a good educational background and at least 3 to 4 years' office experience, who is capable of becoming Senior assistant. Must be keenly interested in Architecture! and a wide variety of related design problems including caravans, furniture, domestic equipment, exhibitions, etc. Good prospects for someone who is conscientious and welcomes responsibility. Please reply in writing stating age and salary required to 88, Talbot Road, Highgate, N.6. 8288

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ELIE MAYORCAS requires SENIOR ASSISTANTS with minimum of three years' office experience in this country. Write, giving particulars of architectural education and experience, and salary required, to: 13, David Mews, Baker Street, W.1. 8089

INTERMEDIATE STANDARD ASSISTANT required for varied practice in either Kingston, Guildford or Dorking office of Barber, Bundy & Greenfield, F/A/A.R.I.B.A. Salary by arrangement. Reply to 5, Apple Market, Kingston-upon-Thames. (KIN. 0011.) 8112

ARCHITECTURAL ASSISTANTS required in West End office. Should have good knowledge of building construction and several years' office experience. Box 7777.

ARCHITECTURAL ASSISTANTS required by Hasker & Hall, L/F.R.I.B.A., for senior and intermediate positions in their offices in London and Warwickshire. Good salary, with scope for initiative and responsibility. Write to 13, Welbeck Street, W.1, or telephone WEL. 0061 or Knowle (Birmingham) 3502. 8474

ARCHITECTURAL ASSISTANTS required for practice in West End, for large interesting commercial projects. Preferably with inter R.I.B.A. or R.I.C.S., and some general office experience. Superannuation scheme and five day week. Salary according to experience. Write:—Cotton, Ballard & Blow, 5, Baker Street, W.1, or telephone WELbeck 3364. 8341

RICHARD SHEPPARD, ROBSON & PARTNERS require ARCHITECTURAL ASSISTANTS. Intermediate or Final standard. 5 Southampton Place, W.C.1. CHAncery 4261. 8284

£1,000/£2,000 p.a. will be paid to experienced competent ARCHITECTS by a private practice in the City of London. The work will be primarily on the drawing board on new and interesting projects of magnitude. A high standard of design and detailing ability is required. Please apply in writing to Box 8505.

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SCHERRER & HICKS require qualified ASSISTANTS for interesting and varied work on schools and other projects with opportunities for taking responsibility. Salary according to age, length and type of experience. Reply in writing to 19, Cavendish Square, W.1. 8396

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ERNO GOLDFINGER requires ASSISTANTS with sound knowledge of construction. Expanding programme of work includes office buildings, schools, shops, factories, local authority and private housing. Local Authority Rates. Telephone: HYDe Park 5657. 8404

LOUIS DE SOISSONS, PEACOCK, HODGES, ROBERTSON & FRASER have vacancies for young qualified, and junior ASSISTANTS in their Exeter Office. Applications, giving details of experience, age and salary, should be sent to 12, Baring Crescent, Exeter. 8442

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SOUTHAMPTON Office requires Senior and Junior ASSISTANTS for mixed practice, commercial, industrial and hospital work. Write in first instance to E. M. Galloway & Partners, F/A.R.I.B.A., 10, Portland Street, Southampton. 8457

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REIGATE.—Senior and Junior ASSISTANTS required. Senior post is opportunity for young man with some experience to take charge of small but rapidly expanding office. Work is varied and prospects excellent for the right man. Apply by letter only to J. R. Stammers, Alders Road, Reigate. 8373

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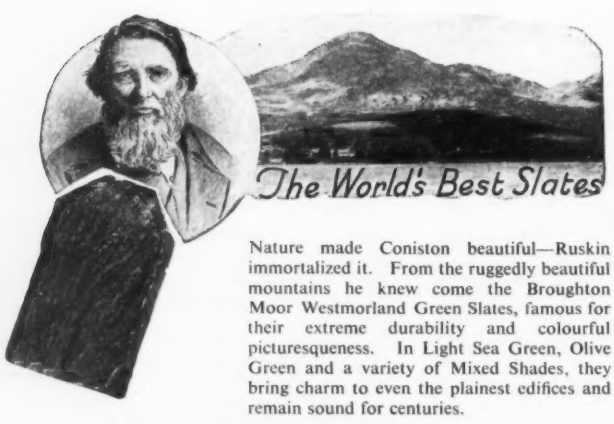
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LONDON ARCHITECTS' OFFICE requires ARCHITECT for University work. Candidates must be well above average, with 5 to 7 years responsible experience. Salary about £1,200. Telephone WHI. 2552 for interview or apply in writing to Box 8175.

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County Hall,
Truro.

E. T. VERGER
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SMALL PROGRESSIVE OFFICE, ABOUT TO EXPAND, REQUIRES ASSISTANT—INTERMEDIATE STANDARD—WITH MINIMUM THREE YEARS' OFFICE EXPERIENCE. APPLY IN WRITING TO: JOHN SHELDON, A.R.I.B.A., M.S.I.A., AT 34, SEYMOUR STREET, LONDON, W.1. 8719

ASSISTANT urgently required, Intermediate to Final standard. Interesting and varied work with opportunities for site supervision. Salary from £600 plus L.V. G. Gordon Stanham, Adamson, Gray & Partners, 9/10, Fenchurch Street, London, E.C.3. MANsion House 1010 and 5274. 8714

W. H. WATKINS, GRAY & PARTNERS require ASSISTANTS of Intermediate and Final standard. Pension scheme and luncheon vouchers. Salary range £700 to £900. Apply 57, Catherine Place, London, S.W.1. 8720

ARCHITECTS (Birmingham and London) have vacancies in salary grades £500—£700 and £900—£1,100 per annum. Interesting programme of work includes civic and university buildings and redevelopment schemes. Write, stating age, experience, qualifications and salary grade, to Box 8729.

ARCHITECTURAL ASSISTANTS required in Architect's Department, Groves & Whitnall Limited, Regent Road Brewery, Salford, 5, Lancs. (1) CHIEF ASSISTANT approaching Final R.I.B.A. to act as deputy to Company Architect. Must be experienced and have drive, initiative and good design ability.
(2) ASSISTANT, with R.I.B.A. Intermediate (or part) with experience and with ability to handle jobs with minimum supervision.
Usual facilities for study, well equipped office, canteen and pension scheme.
Apply in writing to Company Architect, stating age, experience, qualifications and salary required. 8724

FAST moving pencils with Final and Intermediate standard operators required in Ilford Office for work on modern, domestic, commercial and industrial projects at home and abroad. Phone SNA. 2087. 8730

ASSISTANT ARCHITECTS. Intermediate standard, required for busy professional office near Nottingham. State age, experience and salary. Box 8731.

THREE ASSISTANTS required for long established and expanding Architectural practice in Yorkshire on public and private work. Many interesting projects in hand. Should have contemporary outlook and be able to work on own initiative and preferably be car drivers—car provided. Housing accommodation will be provided. Apply, giving full particulars and salary required, to Dyson, Cawthorne and Coles, 25, Regent Street, Barnsley. 8732

EXPANDING practice having a considerable amount of shop interior work require a capable SENIOR with a flair for interior design and layout and the ability to organise such work. This is a responsible position with good prospects and salary for the right man. J. E. Dalling & Partners, 14, Bloomsbury Square, W.C.1. CHA. 4725. 8734

FARMER AND DARK require experienced ARCHITECTS, all levels. Offices, Laboratories, Factories, Schools, etc. Apply in writing, stating salary required. Romney House, Tufton Street, S.W.1. 8735

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ARCHITECTURAL ASSISTANTS. Intermediate and qualified, for medium sized varied London West End practice. Interesting contemporary work, opportunity to exercise initiative. Salary range £700 to £1,200. Apply Box 8740.

BRIGHT young ASSISTANTS wanted urgently to work on a wide range of contemporary projects. Excellent prospects for men with enthusiasm and initiative. Salary range £400—£800 according to experience and ability. Write or telephone Derby 49287. Morrison & Partners, St. Alkmunds House, 105, Belper Road, Derby. 8741

ARCHITECTURAL ASSISTANT required. Design ability and capable of handling projects to completion. Interesting work on hand. Write stating experience and salary required. Illingworth, Son & Grisdale, 15, Sunbridge Road, Bradford, Yorks. 8742

SENIOR ARCHITECT

ACTING directly under Chief Architect, required to control Group Architects dealing with:—
(*a*) Multi-storey flats
(*b*) General Housing.
(*c*) Estate Layouts.
Full scope will be given for exercise of personal initiative and ability. Good working conditions. Superannuation scheme.
Assistance with housing accommodation if required.
Write in strict confidence, giving full details of age, experience and present salary, to R. Edmund Firbank, A.R.I.B.A., Chief Architect and Planner, New Ideal Homesteads Ltd., 61, South Street, Epsom, Surrey. 8691

QUALIFIED ARCHITECTS
and
ARCHITECTURAL ASSISTANTS
URGENTLY REQUIRED
for

THE formation of Groups dealing with the following:—
(*a*) Multi-storey flats.
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Assistance with housing accommodation if required.
Write in strict confidence, giving full details of age, experience and present salary, to R. Edmund Firbank, A.R.I.B.A., Chief Architect and Planner, New Ideal Homesteads Ltd., 61, South Street, Epsom, Surrey. 8692

ARCHITECTURAL ASSISTANT required in busy country practice—interesting and varied work. L. W. Carpenter, A.A. Dipl., A.R.I.B.A., 4, Agincourt Square, Monmouth. Tel. MONmouth 610. 8704

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RICHARD COSTAIN LIMITED have vacancies for Assistant Architects at their Head Office to work on public buildings and town development projects in the Middle East.
Candidates, aged 25-30, should be Final R.I.B.A. standard and have had at least three years' practical experience. There are opportunities for working abroad at a later stage.
Please write, stating age and details of experience, to: Personnel Officer, 111, Westminster Bridge Road, London, S.E.1. 8697

AN opportunity exists for a qualified ARCHITECT to join the staff of a leading Company to take charge of the commercial development of an entirely new system of construction. He should be interested in contemporary design particularly in relation to factory-produced units, and it is essential that he should be interested in meeting people and have a strong leaning towards salesmanship. Please reply with full details to Box 8695.

COLCHESTER Office of Messrs. Piper, Whalley & Partners, A.R.I.C.S./A/A.R.I.B.A., require an ARCHITECTURAL ASSISTANT of Intermediate standard whose salary will be in accordance with his ability and experience. Write or telephone 1, Rawstorn Road, Colchester; telephone 77412. 8698

ARCHITECTURAL ASSISTANTS, Qualified and Intermediate standard, required for interesting industrial, hospital and educational schemes. Five-day week. Salary by arrangement. Apply, giving full particulars, to Harry Banister & Partners, 67, Rodney Street, Liverpool, 1. 8701

AN interesting position can be created in a progressive architect's office for a young ARCHITECT (or architecturally-trained man) to concern himself with visual presentation of ideas, that is design drawings, perspectives, models, etc. The office is not a large one and the job would entail working closely with the whole office team. Box 8702.

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ARCHITECTURAL ASSISTANT, with a desire to resume a responsibility, required for newly opened office. Write stating age, experience and salary required, to T. K. McCann, A.R.I.B.A., A.M.T.P.I., 180, Oxford Road, Manchester, 13. 8710

WILLIAM HOLFORD & PARTNERS require ARCHITECTURAL ASSISTANT of Intermediate/Final standard to work on University buildings. Apply, giving age, qualifications, experience and salary required, to 2, Angel Court, E.C.2. 8712

DESIGN RESEARCH UNIT requires JUNIOR for architectural drawing office. Some drawing and office experience and interest in design. £450—£550 p.a. Apply in writing: 37, Duke Street, London, W.1. 8713

ASSISTANT, with enthusiasm for modern design, required by small congenial private practice. Opportunity to run own jobs. Commencing salary about £700, according to experience. Challen & Floyd, 7, Cromwell Road, S.W.7. KEN. 8334 and 8549. 8745

INTERMEDIATE ASSISTANT required for recently established West End practice. Box 8748

ASSISTANT ARCHITECT required in Cheltenham office. Write stating age and experience to Dancey & Meredith, 119, Promenade, Cheltenham. 8739

CLIFFORD TEE & GALE, F/F.R.I.B.A., have at their Victoria, S.W.1, office an opening for TWO ARCHITECTURAL DRAUGHTSMEN with at least some office experience and a lively interest to work on industrial and commercial projects. If you are keen to work well for suitable rewards, write to Mr. S. H. Fisk, 5, Buckingham Palace Gardens, S.W.1. 8755

EXPERIENCED ASSISTANT required in London Office. Write giving particulars to Box 8758.

RAPIDLY expanding Group of Companies engaged on all types of work require a SENIOR MAN to run drawing office under direction of Company Architect. It is envisaged that the successful applicant will probably be in the 35-45 age group with appropriate experience, and possibly with academic qualifications. Full details, which will be treated in strict confidence, should be sent to the Company Architect, E. & J. Cotton Ltd., High Street, Iver, Bucks. 8759

ARCHITECTS' CO-PARTNERSHIP requires an ASSISTANT for responsible position in connection with design and building of important University Research Laboratory. Write to 44, Charlotte St., or 'phone LAN. 5791. 8761

RAMSEY, MURRAY, WHITE & WARD require a qualified ASSISTANT. Salary according to experience. Apply to the Secretary, 32, Wigmore Street, London, W.1. 8762

ASSISTANT ARCHITECT, Final standard required; also ARCHITECTURAL ASSISTANT, Intermediate standard, for West End Architect's Office, for Hospital, Commercial and Overseas projects. Pension scheme and luncheon vouchers. Salary by arrangement. Telephone LANgham 4091 for appointment. 8767

TWO ARCHITECTURAL ASSISTANTS required—Intermediate R.I.B.A. standard—who have had good office experience. Salary £600—£800 according to experience. Housing accommodation could be provided. Reply, giving particulars of age and experience and salary required, to: Francis W. Keyworth, L.R.I.B.A., 20, Park Road, Melton Mowbray, and 31, Friar Lane, Leicester. 8772

ARCHITECTURAL ASSISTANTS required for private practice LONDON for interesting and varied work. Applicants should be of Intermediate standard, with office and survey experience. Salary by arrangement. Write giving brief particulars, present salary, age, etc., Box 8777.

ASSISTANT ARCHITECT wanted in new Chelmsford office by well established London firm, age 22/35, Intermediate standard at least. Salary range £500/£950 according to qualifications. Interesting and varied work Home Counties and London area. Apply Gunton & Gunton, Empire House, St. Martins le Grand, London, E.C.1. 8781

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ASSISTANT required. Write Eric Lyons, O.B.E., F.R.I.B.A., M.S.I.A., Mill House, Bridge Road, Hampton Court, Surrey. 8673

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ARCHITECTURAL ASSISTANT required in Company Architect's Department to work on an interesting industrial and commercial building programme. Good working conditions. Fares paid for evening classes. Five-day week, pension scheme. Applicants with three years' office experience are asked to write, giving particulars of age, experience and salary required, to Company Architect, Coates Brothers & Company Ltd., St. Mary Cray, Kent. 8675

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ARCHITECTURAL ASSISTANT of Intermediate standard or thereabouts required for varied work on housing and industrial building. Applicant should be capable of undertaking projects with a minimum of supervision. Write giving full particulars of experience and salary required to Shepperdson & Dixon, 2, Museum Street, Ipswich. 8678

STIRLING AND MARGARET CRAIG require ASSISTANTS of Final and Intermediate standard for varied work. 30, London Road, Stevenage, Herts. Stevenage 1082. 8648

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(b) ASSISTANTS. (Salary £750—£1,000.) Should be of Intermediate-Final standard, capable of preparing full working drawings, specifications, etc., under supervision.
(c) JUNIOR ARCHITECTURAL ASSISTANTS. (Salary up to £750.) Up to Intermediate R.I.B.A. standard. Opportunities to gain experience on a wide range of contracts.
Progressive salary depending on ability. Pension Scheme. Five-day week. Travelling expenses paid to interviewed applicants.
Replies to 21, Cleveland Place, St. James's, S.W.1. 8686

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(b) ASSISTANTS. (Salary £750—£1,000.) Should be of Intermediate-Final standard, capable of preparing full working drawings, specifications, etc., under supervision, and of taking responsibility for smaller contracts.
(c) JUNIOR ARCHITECTURAL ASSISTANTS. (Salary up to £750.) Up to Intermediate R.I.B.A. standard. Opportunities to gain experience on a wide range of contracts.
Progressive salary depending on ability. Pension Scheme. Five-day week. Travelling expenses paid to interviewed applicants.
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ARE you a Bright Young ARCHITECT with about three to five years' experience, wanting to carve out a profitable future? If so, I have a vacancy which may interest you. Varied domestic and industrial work. Good basic salary and share of profits. Urgently required. J. A. Warner, Chartered Surveyor, 12, High Street, Rochester. 8652

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The post is an important one and requires substantial experience in general administration, building and ancillary work, though it is not necessary that this should have been gained in the field of retail distribution. The possession of a qualification such as the Higher National Certificate of the Institute of Builders will be an advantage.

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THE Town Council of the Royal Burgh of Dumbarton invite Architects resident in the United Kingdom to submit designs for an area of 40 acres for redevelopment primarily for commercial use, in the centre of the Burgh.

Assessor: Professor R. H. Matthew, C.B.E., M.A., F.R.I.B.A.

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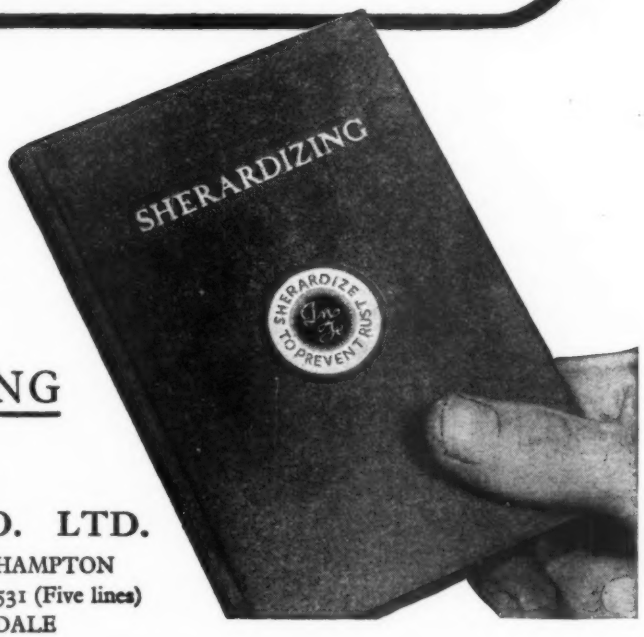
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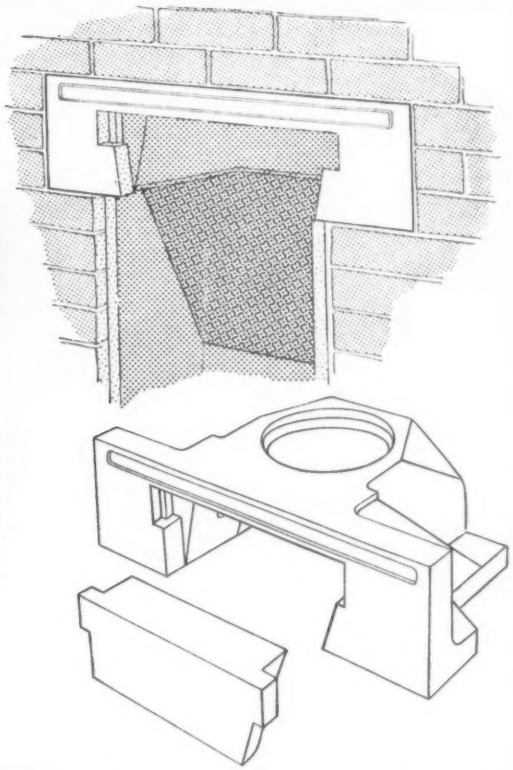
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